Emission Inventory Report

AIR QUALITY MODELING ANALYSIS FOR THE SAN JUAN COUNTY EARLY ACTION OZONE COMPACT: Development of the 2002 Base Case Modeling Inventory

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31 October 2003

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1. INTRODUCTION

ENVIRON International Corporation and Alpine Geophysics, LLC are performing photochemical modeling for the New Mexico Environment Department (NMED) to support the development of a 8-hour ozone attainment control plan for San Juan County, New Mexico as part of an Early Action Compact (EAC) State Implementation Plan (SIP) due in 2004. The June 5, 2002 to July 23, 2002 modeling period was selected along with a 36/12/4/1.33 km nested-grid modeling domain that includes Mexico in the south to Wyoming in the north and California in the west to western Missouri to the east. A Modeling Protocol has been prepared that describes the rationale for the episode selection, model and domain selection and procedures for performing the photochemical modeling and 8-hour ozone attainment demonstration (Tesche et al., 2003a). The same ENVIRON/Alpine science team is also performing 8-hour ozone EAC modeling for the Denver, Colorado area for the Denver Regional Air Quality Council (DRAQC) and the Colorado Department of Public Health and Environment (CDPHE) (Tesche et al., 2003b).

The June 5 - July 23, 2002 episode is being modeled in CAMx using a Lambert Conformal Projection (LCP) nested grid configuration with grid resolutions of 36, 12, 4 and 1.33 km. In CAMx, emissions are separated between surface (surface and low level point) emissions and elevated point source emissions. For the surface emissions, a separate emission inventory is required for each grid nest, i.e., four inventories. For elevated point sources, a single emission inventory is prepared covering all grid nests. Figure 1-1 displays the modeling domain including the nested grid configuration. Emission inventories were prepared for the 2002 base year.

This report describes the emission inventory preparation for the June 5 - July 23, 2002 modeling episode for the San Juan County, New Mexico EAC air quality modeling. Emission inventories are processed using version 2x of the Emissions Processing System (EPS2x) for area, off-road, on-road mobile and point sources (ENVIRON, 2001). The purpose of the emissions processing is to format the emission inventory for CAMx photochemical modeling. Data sources and processing steps required to develop the emission inventory are documented in the following sections.

A discussion of the emission processing required to develop the model-ready emission inventory is presented in Section 2. Section 3 presents the data sources and processing steps for the development of the 2002 Base Year inventory. Section 4 summarizes the inventory by major emission source category: area, on-road mobile, off-road mobile stationary point sources and biogenics.

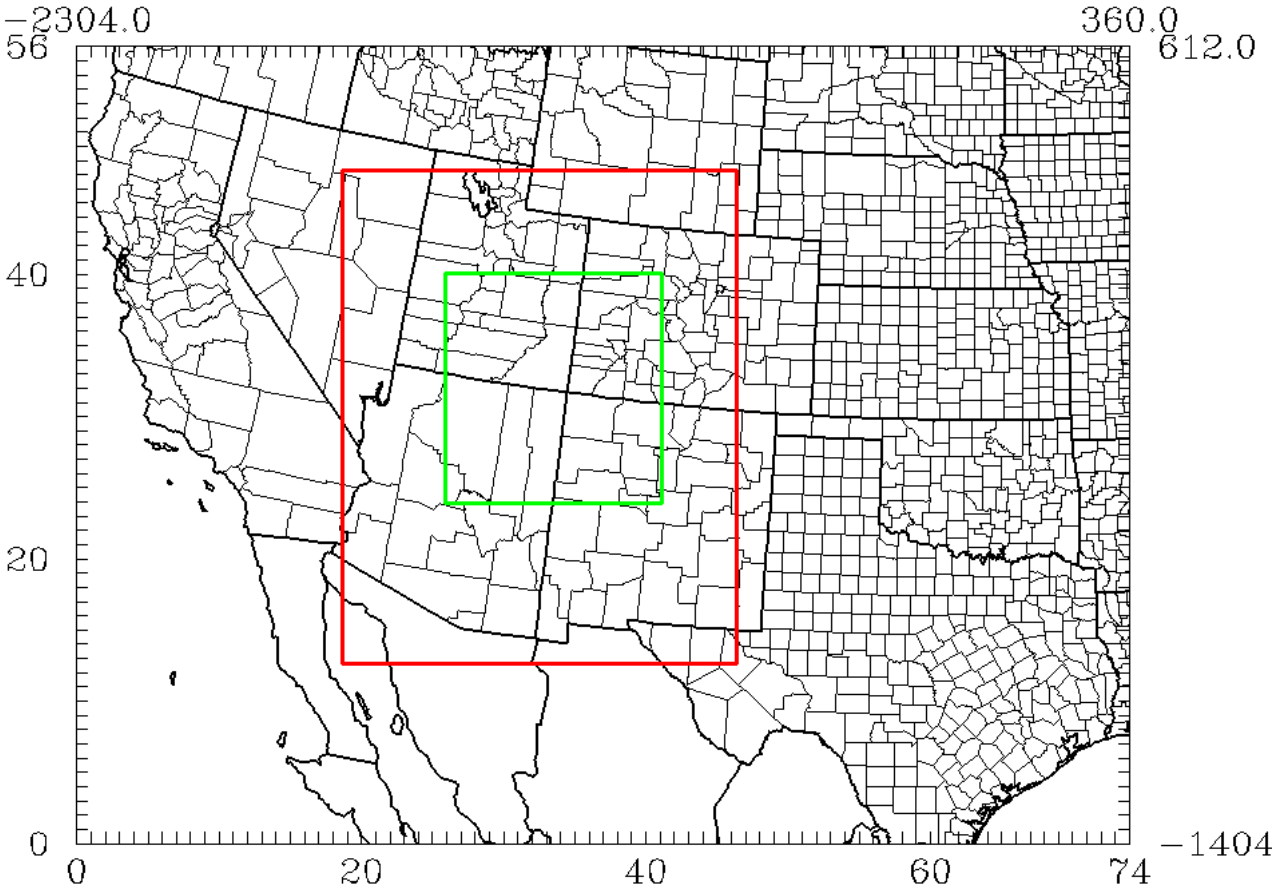

Figure 1-1. San Juan County EAC air quality modeling domains.

2. EMISSION INVENTORY PROCESSING

CAMx requires two types of emission input files:

1. Surface emissions from area, mobile, off-road, low-level point and biogenic sources are gridded to the CAMx nested grid system. This means that separate surface emissions files will be prepared for the 36 km, 12 km and 4 km grids. The surface emissions are injected into the lowest layer of the model.
2. Elevated emissions from major point sources are injected into CAMx at the coordinates of each source. The plume rise for each source is calculated by CAMx from stack parameters so that the emissions are injected into the appropriate vertical layer. Emissions from selected major NOx emitters may be treated with the CAMx Plume-in-Grid (PiG) module.

The June 5 - July 23, 2002 episode is being modeled in CAMx using a Lambert Conformal Projection (LCP) nested grid configuration with grid resolutions of 36, 12, 4 and 1.33 km. In CAMx, emissions are separated between surface (surface and low level point) emissions and elevated point source emissions. For the surface emissions, a separate emission inventory is required for each grid nest, i.e., four inventories. For elevated point sources, a single emission inventory is prepared covering all grid nests.

Emissions for different major source groups (e.g., on-road mobile, off-road mobile, area, point and biogenic) are processed separately and merged together prior to CAMx modeling. This simplifies the processing and assists quality assurance (QA) and reporting tasks. The biogenic inventories were generated with both GloBEIS version 3.1, which includes various enhancements to estimate the effects of drought conditions on biogenic emissions.

Emissions Modeling

The emission files were prepared using version 2x of the Emissions Processing System (EPS2x). The emissions model performs several tasks:

Temporal adjustments: Adjust emission rates for seasonal, day-of-week and hour-of-day effects.

Chemical speciation: Emission estimates for total VOC are converted to the more detailed chemical speciation used by the Carbon Bond 4 (CB4) chemical mechanism in CAMx. Total unspeciated NOx emissions are allocated to NO and NO_2 components.

Gridding: The spatial resolution of the emissions must be matched to the CAMx grid(s). Area sources are often estimated at the county level, and are allocated to the grid cells within each county based on spatial surrogates (e.g., population and economic activity). Mobile source emissions may be link specific (from transportation models) so links must be allocated to grid cells.

Growth and Controls: Emissions estimated for one year may need to be adjusted for use in a different year. For the base case modeling, a large portion of the emission inventory data is based on EPA's NEI99 and so the growth, or projection, modules of EPS2x will be utilized.

Quality Assurance: The emissions model includes powerful QA and reporting features to keep track of the adjustments at each processing stage and ensure that data integrity is not compromised.

The outputs from the emissions model are called the "model-ready" emissions, and are day-specific, gridded, speciated and temporally (hourly) allocated. EPS2x performs all of the processing steps for the anthropogenic emissions. The biogenic emissions are prepared using a different model (GloBEIS) because they are based on different input data and have specialized processing requirements (e.g., dependence on temperature, solar radiation and drought conditions).

Emissions for different major source groups (e.g., mobile, off-road mobile, area, point and biogenic) are processed separately and merged together prior to CAMx modeling. This simplifies the processing and assists quality assurance (QA) and reporting tasks. The biogenic inventories were generated with both GloBEIS version 2.2 and GloBEIS version 3.1, which includes various enhancements to estimate the effects of drought conditions on biogenic emissions.

Chemical Speciation

Emission estimates for total VOC must be converted to the more detailed chemical speciation used by the Carbon Bond 4 (CB4) chemical mechanism in CAMx. Total unspeciated NOx emissions are allocated to NO and NO_2 components.

The overall accuracy of the emission inventory is affected by the speciation of criteria pollutants, especially VOC emissions. The VOC speciation of the emission inventory should match what is present in the ambient VOC data. Uncertainties in the emission inventory, including chemical speciation, affects the accuracy of the resulting modeling inventory and, in turn, the results of the air quality model simulation. The emission inventory data used by ENVIRON and the CDPHE for this project have been developed following accepted EPA protocols.

The EPS2 emission model includes default speciation profiles by SIC/SCC codes. These profiles are based on EPA default data as well as of various updates and improvements incorporated to account for such things as variations in fuels, solvent composition, and chemical mechanisms used in the air quality models.

Except for oil and gas emission sources in Northwest New Mexico and Weld County, Colorado, discussed in Section 3, the default EPS2 speciation cross-reference and profiles were used to develop the inventory. Listings of speciation profiles and cross-reference data are too voluminous to include in this report, as there are literally hundreds of possible profile codes and assignments. An electronic archive of the data used for speciation of the inventory can be made available if desired.

Spatial Allocation

The spatial resolution of the emissions must be matched to the CAMx grid(s) for air quality modeling. Area and off-road mobile sources are estimated at the county level, and are allocated to the grid cells within each county based on spatial surrogates (e.g., population and economic activity). Link specific mobile source emissions (from transportation models) also must be allocated to grid cells. Biogenic emissions are gridded for the modeling domain using the GloBEIS model.

Spatial allocation of regional or county-level emission estimates is accomplished through the use of spatial surrogates or spatial allocation factors (SAFs) for each emission source category or group of source categories. Spatial surrogates are typically based on the proportion of a known region-wide characteristic variable that exists within the region of interest. Traditionally the development of spatial gridding surrogates for dispersion modeling applications has been performed by a variety of methods depending on the emission source category being considered, the required spatial resolution, the geographic extent of the domain, and the particular characteristics of the geospatial data available. The same spatial allocation methodologies can also be applied to general arbitrary regions. Spatial surrogates must define the percentage of regional or county level emissions from a particular source category that is to be allocated to some spatial region, typically a modeling grid cell. For most area and off-road sources, these percentages are based on areas of a particular land use/land cover type while for on-road mobile source categories, the percentages are usually based on total length of a certain road type or a transportation network. Often human population is also used as a spatial surrogate for certain emission source categories.

The processing and development of gridding surrogates is usually performed using GIS. To develop spatial surrogates, or SAFs, the appropriate surrogate databases (i.e., land use, population, roadways, railways, etc), the user-specified region, and the regional/county boundaries are first imported into the GIS as geospatial coverages. Through intersecting, or overlaying, these coverages, the appropriate areal and/or linear percentages can be calculated as follows. The spatial data are first intersected with the regional boundaries to generate a new coverage that contains polygons, or arcs, with attributes associated with the spatial data and the regional boundaries. The total area, or length, of a particular land use, or roadway type, within each region or county can then be calculated. The resulting coverage is then overlaid with the arbitrary user-defined region to associate the spatial attributes of the region with the land use and regional/county boundary attributes. These procedures result in the generation of new polygons, each of which has all of these attributes as well as the corresponding areas, or lengths. The spatial allocation factors are then generated by forming ratios of the total area, or length, in each region and county to the corresponding total area, or length of the particular spatial data type within each county. The resulting SAFs are then multiplied by the county-level emission estimates to obtain the emission estimate for the general user-defined region.

Spatial surrogates can be developed from several sources of spatial data describing the Land Use/Land Cover (LULC), transportation networks and population characteristics.
Land use data can be obtained from the USGS EROS Data Center web site (http://edcftp.cr.usgs.gov/pub/data/landcover/states) and are a subset of the National Land Cover Dataset (NLCD). This dataset provides dominant land use data for each state at a

spatial resolution of 30 meters. This dataset includes 21 LULC categories based on a Modified Anderson Level 2 categorization scheme. More detailed descriptions of the NLCD land use types are available from the USGS web site.

The EPA has developed spatial surrogates for emission inventory development (ftp://ftp.epa.gov/EmisInventory/emiss_shp/). These data are based on USGS LULC data and the 1990 US Census. The EPA is currently developing spatial surrogates for emission inventory development, including source category-surrogate cross-reference data. These data are based on the NLCD LULC data and 2000 US Census population and transportation network data. The data are being developed for entire conterminous US at a spatial resolution of 4-km. The data were scheduled for release to the public in late spring 2003, but the project has not been completed and only the GIS cover data are available at this time.

Spatial surrogate data for LULC, population and housing statistics, and roadway distributions were derived from EPA datasets. The GIS-based spatial surrogate database developed by the EPA from USGS LULC data and 1990 Census was gridded at a spatial resolution of 4km for the RPO LCP modeling domain by Alpine Geophysics and used as the basis for the gridding surrogates. The recently developed EPA surrogate database using 2000 US Census and TIGER Line data were incorporated into the gridding surrogates used for this project. The spatial surrogates for population, housing and roadways were updated with the more recent EPA database developed from the 2000 Census data. Time and resource constraints precluded the development of LULC-based surrogates using the 2000 EPA database.

Surrogates used in the development of the gridded emission inventory are presented in Table 2-1. Appendix A presents the source category/surrogate assignments used for development of the gridded inventory. Table A-1 presents the SCC/Surrogate assignments used for area sources. Off-road mobile source surrogate assignments are presented in Table A-2, while on-road mobile source surrogate assignments are presented in Table A-3.

Table 2-1. Spatial surrogates codes and definitions used for emission inventory development.

Surrogate Code	Surrogate Definition
1	Population
2	Housing
3	Area
4	Water bodies
5	Agricultural land
6	Airports
7	Shipping ports
8	Railroads
9	Urban land
10	Rural land
11	Forest land
12	Urban primary roads
13	Rural primary roads
14	Urban secondary roads
15	Rural secondary roads

3. INVENTORY DEVELOPMENT AND DATA SOURCES FOR 2002

The 2002 base year emission inventory was based on the EPA's 1999 National Emission Inventory (NEI99). These 1999 emission estimates were projected to the 2002 base year using the EPS2x growth and projection modules with growth factors developed with the EGAS model. Emissions from stationary point sources in the Four Corners region of New Mexico were provided by NMED. The remaining areas within New Mexico utilized stationary point source emissions data from the NEI99. All other emission source category data for New Mexico was obtained from the NEI99. The New Mexico Oil and Gas Association (NMOGA) provided emission estimates for un-permitted oil and gas production wells in the northeast corner of the state. In support of the Denver EAC modeling effort, the CDPHE provided emission inventory data for 2002 for the entire State of Colorado. For the remaining states within the modeling domain, the NEI99 was used. Emission data for Mexico were based on a draft inventory as used in the BRAVO modeling study (ENVIRON, 2003a)

Emissions data was provided by Alpine Geophysics and differs from the EPA's version 2 of the NEI99 in that several improvements were incorporated based on the draft version 3 NEI database. These improvements were primarily associated with the residential fossil-fuel combustion source category, the inclusion of updated data for Midwest states developed by the Lake Michigan Air Directors Consortium (LADCO), and the inclusion of point source data for some Eastern US states. The NEI99 version 2/version 3 data is referred to hereafter simply as the NEI99. The data were obtained as ASCII files in IDA format. The IDA files were reformatted to AFS/AMS file format for processing with EPS2x.

A summary of data sources for the development of the modeling emissions inventory is provided in Table 3-1.

Table 3-1. Summary of emissions data sources.

Category	Region	Data Source
Mobile	New Mexico	EPA NEI99 Version 2, MOBILE6
	Denver Metro	CDPHE link-based, MOBILE6
	Other Colorado	CDPHE
	Other States	EPA NEI99 Version 2, MOBILE6
Offroad	New Mexico	EPA NEI99 Version 2
	Colorado	CDPHE emissions data
	Other States	EPA NEI99 Version 2
Area	New Mexico	EPA NEI99 Version 2
	Colorado	CDPHE emissions data
	Other States	EPA NEI99 Version 2
Oil & Gas	Colorado	Included in Point Source inventory
	New Mexico	NMOGA Un-permitted data base
	Outside CO and NM	EPA NEI99 Version 2
Point	Four Corners Area of New Mexico	NMED
	Other New Mexico	EPA NEI99 Version 2
	Colorado	CDPHE emissions data
	Other States	EPA NEI99 Version 2
Biogenic	Entire Domain	GloBEIS3 with BELD3 LULC data

Point Sources

Point source data were obtained from different sources, processed separately and merged prior to modeling. The data include:

- Point sources for the Four Corners area of New Mexico
- Colorado point sources
- Other State point sources
- Mexico point sources

The point source data are processed for a typical peak ozone (PO) season weekday and weekend day. Continuous Emissions Monitoring (CEM) data for the State of Colorado was provided by the CDPHE, which are hourly episode day specific data, for major NOx sources. However, due to the scheduling and resource constraints these data were not included in the 2002 base year emissions inventory. The 2002 Colorado point source data were provided in EPS2x AFS input format.

For the remaining counties within New Mexico and for all states other than Colorado, data for criteria pollutants from the NEI99 was used. Point source emissions for Mexico were obtained in as ASCII IDA formatted files and re-formatted for processing with EPS2x.

The criteria for selecting NOx point sources for plume in grid treatment within the 4-km modeling domain is 2 tons NOx on any episode day. For the regional emissions grid, the NOx criteria is 25 tons per day on any episode day.

On-Road Mobile Sources

On-road mobile emission sources were processed separately for the State of Colorado and all remaining states in the modeling domain and Mexico. For Colorado, link-based emissions data was provided for the Denver metropolitan area. HPMS-based VMT data provided by the CDPHE were used for the remaining counties in Colorado. All other on-road mobile emission estimates were based on the NEI99 database.

New Mexico On-Road Mobile Source Emissions

On-road mobile source emissions data for the State of New Mexico were based on the NEI99. The NMED has noted that on-road mobile activity patterns in San Juan County and the surrounding areas can differ significantly from the national default reflected in the NEI99 data. For this reason, information on local traffic patterns was requested from state and local transportation planning agencies. The New Mexico Department of Transportation provided daily traffic count data for San Juan County. These data summarize daily total traffic volumes by road segments and vehicle class (Light Duty/Heavy Duty). However, these data were not considered useful in the development of gridded hourly emissions inventories since there was no information related to hourly activity levels. Therefore, for the San Juan EAC modeling effort, the default on-road mobile source emission inventory was based on the NEI99 data, and processed as discussed below.

Regional On-Road Mobile Source Emissions

The NEI99 is the basis for the on-road mobile source regional emissions inventory for those states outside Colorado. Both county-level VMT and emission data were obtained as ASCII IDA formatted files. Due to the resource intensive processing required to estimate emissions from the VMT data for all counties outside Colorado, the county-level emissions data were used instead. These data were first projected to the 2002 base year using EPS2x with growth factor calculated using the EGAS model. The resulting county-level 2002 emission estimates were treated as area sources and processed with EPS2x. A road type distribution (urban primary, rural primary, urban secondary, rural secondary) was used to spatially allocate the on-road emissions to grid cells in each of the modeling domains.

Mexico on-road mobile source emissions were obtained on a state/municipality level and processed as area sources. The Mexico emission inventory data is for 1999. Due to a lack of growth factor information, no attempt was made to project these data to the 2002 base year.

Colorado On-Road Mobile Source Emissions

The following discussion summarizes the data, assumptions, and methodology used to develop on-road mobile source emissions inventory for the State of Colorado for the San Juan County EAC photochemical modeling effort. Emissions were estimated for all counties in Colorado for the following episode days: June 25-July 1, 2002 and July 18-July 21, 2002. Two distinct approaches were applied based upon the type of activity data available to each specific county/region, each are described separately below. First, however, the data and assumptions applicable to both are presented.

Emission factors in all cases were obtained from the US EPA's MOBILE6 model. Temperature and humidity inputs were taken from MM5 modeling performed by Alpine Geophysics for the air quality modeling portion of this work. In-use control inputs for the Denver, Fort Collins, and Colorado Springs areas were provided by the CDPHE. These parameters describe the inspection and maintenance programs as well as fuel specifications such as oxygenate content and RVP. Local VMT (fleet) mixes were also provided. For counties not included in the group above, MOBILE6 modeling was done assuming the same RVP value (as the counties above) but no other controls.

Link-based activity (VMT) data for the Denver, Fort Collins, and Colorado Springs areas were provided by the CDPHE. Corresponding MOBILE6 emission factors were prepared by running the model over a range of temperatures, speeds, and humidity conditions. M6LINC, an internal ENVIRON tool, was used to estimate link-specific hourly emissions by mode (start exhaust, running exhaust, running loss, resting loss, hotsoak, and crankcase). Diurnal emissions were estimated outside of M6LINC since MOBILE6 diurnal emission factors cannot be obtained at specific temperatures. These emission factors were estimated by running MOBILE6 with daily minimum and maximum temperatures (rather than for a range of specific temperatures). Summaries of the on-road link-based emissions for the Denver Metropolitan area were presented in ENVIRON 2003b.

HPMS-based VMT data were provided by the CDPHE. These data encompass all counties in the state except those with link-based data. CDPHE staff stated that VMT in counties with link-based data were greater than their HPMS counterpart estimates; therefore, the link-based estimates were used without further reconciliation. Likewise, HPMS data were used for those counties without link-based data. For these latter counties, the only MOBILE6-related differences among them are their temperatures and humidity. Thus, for each episode day, minimum and maximum daily temperatures and daily average humidity were obtained for each county. These counties were then grouped into bins such that within a bin, the variations in minimum and maximum temperatures were no more than five degrees Fahrenheit. The average daily minimum and maximum temperatures and humidity were derived for each group and used in the emission factor modeling. Each of the twelve HPMS facility classes was assigned one of four MOBILE6 road types (non-ramp freeway, arterial, local, and ramp) and a national average speed. Emissions were estimated by county, episode day, pollutant/emission mode, facility type, and vehicle class. A detailed discussion of on-road mobile source emissions processing for Colorado is presented in ENVIRON, 2003a.

Area and Off-Road Sources

For New Mexico and all other areas outside Colorado, the NEI99 is the basis for the area and off-road mobile regional emissions inventory. The NEI 1999 area and off-road emission inventory is (1) processed to extract the typical peak ozone season day data, (2) reformatted to AMS input file format and (3) processed with EPS2x.

The CDPHE provided 2002 emission inventories for Colorado area and off-road sources. The data were provided as EPS2x AMS formatted files. These data were processed using EPS2x and spatially allocated to grid cells using gridding surrogates based on the EPA's gridding surrogate database.

Oil and Gas Emissions

Emissions data from oil and gas production wells within the modeling domain were obtained from the New Mexico Oil and Gas Association (NMOGA), as well as the CDPHE. The CDPHE provided oil and gas emissions within the statewide inventory data files used for the project. Emissions data for oil and gas production in New Mexico was provided separately by NMOGA for numerous small un-permitted operations in the northeast corner of New Mexico.

In the San Juan Basin of New Mexico there are nearly 18,000 oil and gas wells in operation. Each of these emits only a relatively small amount of emission and thus are not subject to permitting based on EPA guidelines. However, in aggregate, the large number of wells contributes a substantial amount of NOx and VOC to the overall inventory.

Bruce Gantner of NMOGA provided NOx and VOC emissions estimates for the three New Mexico counties within the San Juan Basin; San Juan, Sandoval, and Rio Arriba (Gantner, 2003). Flash, loading, working and standing, venting and fugitive VOC emission estimates

were provided. NOx emissions for various engine types were provided on a basin wide basis. Table 3-2 summarizes the VOC emissions from these sources. NOx emissions for the entire basin totaled 28,234 tons per year

Table 3-2. Summary of oil and gas emissions for the San Juan Basin (tpy).

County	Loading	Flash	Working & Standing	Venting	Fugitive	Total
San Juan	193	197	3,518	16,775	2,073	22,756
Rio Arriba	167	189	2,416	13,687	1,424	17,883
Sandoval	17	22	107	103	63	312
Total	377	408	6,041	30,565	3,560	40,951

The San Juan Basin includes several oil and gas formations that span all three counties. Speciation information by formation was provided with the emissions data. Although the EPS2 model includes default speciation profiles for oil and gas operations, it was desirable to develop specific profiles for these sources since the information required to do so was provided. Table 3-3 presents the specific gas profiles for each of the four formations for which data was provided.

Table 3-3. Gas profiles by formation for the San Juan Basin.

	Mesa Verde	Dakota	Pictured Cliffs	Gallup
Nitrogen	0.212	1.603	0	0.965
Carbon Dioxide	1.388	1.034	1.403	0.639
Methane	84.372	74.979	87.736	76.944
Ethane	8.221	12.163	6.373	10.823
Propane	3.19	6.488	2.651	6.552
Butanes	1.432	2,532	1,148	2.551
Pentanes	0.727	0.765	0.418	0.948
Hexanes	0.459	0.437	0.270	0.578
Benzene	0.0145	0.016	0.003	
Toluene	0.00706	0.003	0.0014	
Ethyl Benzene	0.00037	0.0001	0.0002	
Xylene	0.002	0.0006	0.001	

Speciation profiles were developed separately for each of the four formations based on the information in Table 3-3. Because the emissions data was provided by county, and not separately for each formation, an average speciation profile was used for all formations.

Estimated VOC emissions for natural gas escaping to the atmosphere (e.g., fugitive emissions at gas wells) did not include ethane because EPA has excluded ethane from the definition of VOC. However, ethane does have some potential to form ozone and this is accounted for in the CB4 and SAPRC99 chemical mechanisms used for ozone modeling. Also, ethane is generally the second largest constituent of natural gas, after methane, and so ethane may be a significant component of the ozone formation potential of natural gas. Therefore, we calculated the emissions of ethane that were associated with the reported VOC emissions for natural gas so that this ethane could be accounted for in the ozone modeling. The ethane

emissions were calculated using the ethane/VOC ratio determined by chemical analysis of natural gas produced in the northern New Mexico area.

Temporal allocation of the annual emissions for oil and gas operation was assumed constant for NOx emissions and VOC emissions except for working and standing emissions. For working and standing VOC emissions a specific monthly temporal profile was provided by NMOGA. Spatial allocation of emissions were based on the location of wells within each county for VOC emissions and on the location of wells across the entire basin for NOx emissions.

Table 3-4 displays the resulting CB4 speciated oil and gas VOC emissions, by county for the San Juan Basin based on the speciation profiles developed from the information supplied by NMOGA. Speciated ethane emissions are displayed in Table 3-5.

Table 3-4. Speciated VOC emissions from oil and gas operations in the San Juan Basin (tons/day).

County	VOC	PAR	TOL	XYL
Rio Arriba	57.4558	46.7920	0.0469	0.0161
Sandoval	0.8544	0.6958	0.0007	0.0002
San Juan	53.8748	43.8757	0.0440	0.0151
Total	112.1851	91.3635	0.0916	0.0314

Table 3-5. Speciated Ethane emissions from oil and gas operations in the San Juan Basin (tons/day).

County	Ethane	PAR
Rio Arriba	34.5743	7.3574
Sandoval	0.5558	0.1183
San Juan	44.8748	9.5494
Total	80.0051	17.0251

Weld County, Colorado Oil and Gas Emissions

Emission estimates for oil and gas operations in Weld County, CO were also included in the base year inventory. Detailed speciation information provided by the Colorado Oil and Gas Association (COGA) was used to develop speciation profiles for these sources. Table 3-6 presents the VOC speciation data provided by COGA for the Weld County oil and gas operations. Based on these data, new speciation profiles were developed and applied to all point source records in the emission inventory with Standard Industrial Codes (SIC) of 1321. According to information provided by the Denver Regional Air Quality Council, the VOC flash emissions from these sources do not include ethane or methane, which are considered non-reactive according to the EPA. Therefore, the speciation profiles developed here did not include the fractions of methane and ethane from Table 3-6 (C1/C2).

Table 3-6. Raw oil & gas speciation data from COGA.

	All Samples without 19New		
Compound	**Total**	**Avg (lb/hr)**	**PCT - Wt**
H2S	0.000	0.000	
O2	0.000	0.000	
CO2	0.664	0.027	2.90
N2	0.011	0.000	
C1	2.334	0.093	10.19
C2	3.769	0.151	16.45
C3	6.539	0.262	28.55
i-C4	2.001	0.080	8.74
n-C4	3.591	0.144	15.68
i-c5	1.237	0.049	5.40
n-C5	0.995	0.040	4.34
C6	0.482	0.019	2.10
C7	0.697	0.028	3.04
C8	0.110	0.004	0.48
C9	0.030	0.001	0.13
C10+	0.004	0.000	0.02
Benzene	0.043	0.002	0.19
Toluene	0.063	0.003	0.28
Eth-Benze	0.000	0.000	0.00
Xylenes	0.014	0.001	0.06
n-C6	0.311	0.012	1.36
224-Tri-MP	0.021	0.001	0.09
Total	0.000	0.916	100.00
	Percent wt based on total emissions (lb/hour)		

The total VOC flash emissions (Condensate Tank SIC 1321) in the point source inventory in Weld County amount to approximately 129 tons/day. Applying the speciation profiles based on the COGA-specific gas profile information results in the CB4 speciated VOC emissions presented in Table 3-7. The resulting speciated VOC emissions presented in Table 3-7 are considered more appropriate than those resulting from use of the default speciation profiles for the current emission inventory as they are based on local data.

Table 3-7. COGA-specific CB4 speciated oil and gas emissions for Weld County (tons/day).

Source Category	VOC	OLE	PAR	OL	XYL	FORM	ALD2	ISOP
Condensate Tank SIC 1321	128.96	0.0	111.83	0.6124	0.1350	0.0	0.0	0.0

As was done for the San Juan Basin oil and gas emissions, ethane emissions associated with the flash VOC emissions sources in Weld County were added to the existing VOC emissions. Based on the speciation information provided, 30 tons per day of ethane emissions were added. These ethane emissions were speciated as PAR for air quality modeling and resulted in 6.39 tons per day of PAR emissions.

Biogenic Sources

Biogenic emissions were prepared using version 3.1 of the GloBEIS model (Yarwood et al., 1999a,b). The GloBEIS model was developed by the National Center for Atmospheric Research and ENVIRON under sponsorship from the Texas Commission on Environmental Quality (TCEQ). Biogenic emissions developed using GloBEIS 2.2 have been used previously for air quality modeling in East Texas (ENVIRON, 2003b) as well as other regions throughout the US. Sensitivity simulations suggest the importance of drought effects on biogenic emissions as well as air quality modeling results. These effects have been documented by Hoats et al, 2003.

GloBEIS version 2.2 is based on the EPA BEIS2 model with the following improvements:

- Updated emission factor algorithm (called the BEIS99 algorithm).
- Compatible with the EPA's BELD3 landuse/landcover (LULC) database (EPA, 2000).
- Compatible with the TCEQ's Texas specific LULC database (Yarwood et al., 1999b), which includes local survey data for Northeast Texas developed by NETAC (ENVIRON, 1999).
- Ability to use solar radiation data for photosynthetically active radiation (PAR).

GloBEIS 3.1 requires input data for LULC, temperature, humidity, wind speed and solar radiation. Briefly, these data are:

- EPA BELD3 LULC data.
- Gridded, hourly temperature data from the MM5 meteorological model.
- Gridded, hourly humidity data from the MM5 meteorological model.
- Gridded, hourly wind speed data from the MM5 meteorological model.
- Hourly solar radiation (PAR) based on GOES satellite data as analyzed by the University of Maryland.

GloBEIS, version 3, was released in April 2002 (Guenther et al., 2002). GloBEIS3 includes new options such as effects of drought stress and prolonged periods of high temperature. GloBEIS was used to calculate day specific, gridded, speciated, hourly emissions of biogenic VOCs and NOx for each modeling grid (36 km, 12 km, 4 km). The BEIS99 emission factor algorithm was used with no correction for seasonal variation in biomass density. Due to the scheduling and resource constraints, biogenic emissions were estimated using GloBEIS3 without drought effects.

4. EMISSIONS SUMMARIES FOR 2002

All emission estimates in the following tables reflect gridded, model ready emissions. This means that for partial counties and/or states at the edge of a modeling domain, only the portion of emissions that is within the modeling domain is reported.

Tables 4-1 to 4-3 present emission summaries by major source type for all counties in New Mexico.

Table 4-4 summarizes the gridded emissions by major source type for states other than New Mexico.

Table 4-5 presents the gridded biogenic emissions for a typical weekday, Saturday and Sunday, for states other than New Mexico.

Table 4-1. NOx emission summaries by major source type for New Mexico counties.

County		Area			On-Road			Off-Road			Points			Biogenic		
NOx (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35001	Bernalillo	32.39	30.99	35.19	28.36	28.36	37.81	11.96	9.72	14.85	2.71	2.71	2.71	4.96	5.30	4.96
35003	Catron	0.06	0.06	0.06	0.37	0.37	0.49	0.01	0.01	0.01	0.00	0.00	0.00	10.26	11.07	10.65
35005	Chaves	4.32	4.14	4.70	2.51	2.51	3.34	2.14	1.74	2.53	9.08	9.08	9.08	24.90	26.13	26.92
35006	Cibola	0.35	0.34	0.38	4.20	4.20	5.60	4.21	4.13	4.30	12.53	12.53	12.53	0.00	0.00	0.00
35007	Colfax	0.72	0.69	0.78	3.72	3.72	4.95	1.51	1.36	1.53	0.40	0.40	0.40	4.98	5.38	5.10
35009	Curry	2.04	1.95	2.22	1.55	1.55	2.07	10.00	9.90	10.10	0.00	0.00	0.00	2.13	2.21	2.32
35011	De Baca	0.02	0.02	0.02	0.30	0.30	0.41	5.46	5.45	5.35	0.00	0.00	0.00	9.32	10.03	10.17
35013	Dona Ana	5.46	5.23	5.90	17.54	17.54	23.39	6.32	5.67	6.92	7.64	7.64	7.64	24.15	26.36	26.77
35015	Eddy	5.11	4.89	5.55	2.39	2.39	3.18	2.46	1.85	2.93	14.78	14.78	14.78	19.20	20.14	20.88
35017	Grant	2.61	2.50	2.83	2.91	2.91	3.88	2.37	2.28	2.45	0.60	0.60	0.60	20.02	21.88	22.50
35019	Guadalupe	0.05	0.05	0.05	3.97	3.97	5.30	8.59	8.56	8.61	0.00	0.00	0.00	11.69	12.82	12.58
35021	Harding	0.11	0.11	0.12	0.09	0.09	0.12	0.01	0.01	0.01	0.00	0.00	0.00	4.65	4.91	4.90
35023	Hidalgo	0.03	0.03	0.03	2.16	2.16	2.89	1.97	1.83	2.11	1.84	1.84	1.84	7.08	7.82	8.20
35025	Lea	6.42	6.14	6.97	2.43	2.43	3.24	0.66	0.59	0.71	86.04	86.04	86.04	18.29	18.85	20.15
35027	Lincoln	0.61	0.59	0.65	1.38	1.38	1.83	2.81	2.55	3.06	1.08	1.08	1.08	17.93	19.48	20.06
35028	Los Alamos	0.11	0.11	0.12	0.28	0.28	0.37	0.25	0.15	0.35	0.10	0.10	0.10	0.00	0.00	0.00
35029	Luna	0.42	0.40	0.45	4.65	4.65	6.20	4.31	4.29	4.33	9.62	9.62	9.62	16.23	17.82	18.39
35031	McKinley	1.02	0.98	1.09	10.16	10.16	13.55	8.85	8.63	9.07	22.62	22.62	22.62	17.06	18.32	15.82
35033	Mora	0.03	0.03	0.03	1.54	1.54	2.05	0.51	0.51	0.49	0.00	0.00	0.00	3.59	3.89	3.73
35035	Otero	0.99	0.96	1.07	2.65	2.65	3.54	1.93	1.80	2.03	0.20	0.20	0.20	38.50	42.19	42.88
35037	Quay	0.92	0.88	1.00	3.69	3.69	4.91	3.32	3.26	3.30	0.22	0.22	0.22	7.75	8.13	8.37
35039	Rio Arriba	0.33	0.32	0.35	3.86	3.86	5.14	1.34	1.04	1.34	8.40	8.40	8.40	23.29	24.89	23.32
35041	Roosevelt	1.44	1.38	1.57	0.96	0.96	1.29	8.39	8.36	8.36	0.97	0.97	0.97	8.32	8.65	9.10
35043	Sandoval	1.17	1.13	1.25	7.64	7.64	10.18	2.31	1.72	2.90	0.30	0.30	0.30	13.85	14.79	13.72
35045	San Juan	2.02	1.94	2.18	6.46	6.46	8.61	3.26	2.95	3.33	248.15	248.15	248.15	21.01	22.43	20.57
35047	San Miguel	0.60	0.58	0.65	5.00	5.00	6.67	1.48	1.33	1.47	0.00	0.00	0.00	15.25	16.38	15.98
35049	Santa Fe	4.32	4.13	4.68	12.39	12.39	16.52	2.82	2.12	3.59	0.65	0.65	0.65	9.27	10.13	9.49
35051	Sierra	0.24	0.23	0.25	3.06	3.06	4.08	0.99	0.98	0.51	0.00	0.00	0.00	15.61	17.18	16.79
35053	Socorro	0.21	0.20	0.22	5.20	5.20	6.94	4.07	3.97	4.16	0.00	0.00	0.00	20.64	22.38	20.67
35055	Taos	0.75	0.72	0.80	2.92	2.92	3.90	0.71	0.49	0.93	0.00	0.00	0.00	2.98	3.30	3.06
35057	Torrance	0.12	0.12	0.13	3.41	3.41	4.55	5.70	5.57	5.83	0.00	0.00	0.00	14.12	15.33	14.82

County		Area			On-Road			Off-Road			Points			Biogenic		
NOx (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35059	Union	0.03	0.03	0.03	0.50	0.50	0.67	2.46	2.37	2.55	0.00	0.00	0.00	1.55	1.62	1.61
35061	Valencia	0.79	0.76	0.84	6.02	6.02	8.03	11.21	11.08	11.35	0.86	0.86	0.86	3.47	3.73	3.44
Total		**75.79**	**72.61**	**82.14**	**154.27**	**154.27**	**205.69**	**124.39**	**116.27**	**131.38**	**428.78**	**428.78**	**428.78**	**412.06**	**443.52**	**437.93**

Table 4-2. VOC emission summaries by major source type for New Mexico counties.

County		Area			On-Road			Off-Road			Points			Biogenic		
VOC (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35001	Bernalillo	56.47	56.45	56.51	24.12	24.12	32.16	10.70	10.26	14.38	0.22	0.22	0.22	36.77	39.55	34.62
35003	Catron	0.22	0.22	0.22	0.19	0.19	0.25	0.01	0.01	0.02	0.00	0.00	0.00	860.06	971.75	857.08
35005	Chaves	11.15	11.15	11.15	1.47	1.47	1.95	0.81	0.74	0.82	0.24	0.24	0.24	265.60	278.67	290.98
35006	Cibola	2.63	2.63	2.63	2.60	2.60	3.47	0.26	0.25	0.31	0.14	0.14	0.14	0.00	0.00	0.00
35007	Colfax	2.00	2.00	2.00	2.19	2.19	2.92	2.56	2.54	0.82	0.00	0.00	0.00	430.40	472.61	434.72
35009	Curry	5.82	5.82	5.82	0.93	0.93	1.24	0.87	0.85	0.94	0.00	0.00	0.00	14.32	15.00	15.60
35011	De Baca	0.41	0.41	0.41	0.16	0.16	0.21	1.78	1.78	0.54	0.00	0.00	0.00	51.76	57.19	55.88
35013	Dona Ana	14.46	14.46	14.47	14.26	14.26	19.01	4.05	3.93	2.95	0.72	0.72	0.72	81.96	89.88	92.37
35015	Eddy	10.42	10.42	10.43	1.37	1.37	1.83	3.59	3.48	1.47	3.72	3.72	3.72	73.63	77.37	80.05
35017	Grant	3.29	3.28	3.29	1.29	1.29	1.72	1.48	1.47	0.88	0.00	0.00	0.00	146.85	167.95	171.70
35019	Guadalupe	1.31	1.31	1.31	2.14	2.14	2.86	0.92	0.92	0.59	0.00	0.00	0.00	45.85	51.15	50.29
35021	Harding	0.19	0.19	0.19	0.05	0.05	0.07	0.07	0.07	0.02	0.00	0.00	0.00	62.83	66.85	63.52
35023	Hidalgo	1.63	1.63	1.63	1.20	1.20	1.60	0.51	0.49	0.34	0.00	0.00	0.00	270.72	307.07	316.78
35025	Lea	8.62	8.61	8.62	1.40	1.40	1.87	0.53	0.52	0.49	1.39	1.39	1.39	80.25	84.07	88.55
35027	Lincoln	1.46	1.46	1.46	0.73	0.73	0.97	1.32	1.28	0.88	0.22	0.22	0.22	213.03	235.52	256.18
35028	Los Alamos	1.63	1.63	1.63	0.22	0.22	0.29	0.10	0.09	0.15	0.00	0.00	0.00	0.00	0.00	0.00
35029	Luna	3.15	3.15	3.15	2.88	2.88	3.84	0.88	0.88	0.61	0.00	0.00	0.00	85.88	97.32	102.08
35031	McKinley	9.29	9.29	9.29	6.71	6.71	8.94	1.18	1.14	0.97	1.86	1.86	1.86	260.79	281.04	233.19
35033	Mora	0.30	0.30	0.30	0.38	0.38	0.51	0.50	0.49	0.16	0.00	0.00	0.00	144.28	158.45	145.87
35035	Otero	5.39	5.39	5.39	1.50	1.50	2.00	1.77	1.75	1.08	0.10	0.10	0.10	140.21	158.99	157.66
35037	Quay	2.79	2.79	2.79	2.09	2.09	2.78	1.84	1.83	0.76	0.00	0.00	0.00	34.17	36.05	36.17
35039	Rio Arriba	2.98	2.98	2.98	2.01	2.01	2.68	7.71	7.66	2.06	7.45	7.45	7.45	343.50	373.95	341.63
35041	Roosevelt	3.36	3.36	3.37	0.54	0.54	0.72	1.70	1.69	0.91	0.00	0.00	0.00	32.84	34.62	35.77
35043	Sandoval	5.80	5.80	5.80	5.58	5.58	7.44	1.35	1.24	1.35	0.02	0.02	0.02	136.75	145.99	125.99

County		Area			On-Road			Off-Road			Points			Biogenic		
VOC (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35045	San Juan	14.53	14.53	14.54	3.56	3.56	4.75	5.18	5.14	2.07	14.67	14.67	14.67	259.75	279.75	241.54
35047	San Miguel	2.26	2.26	2.26	3.10	3.10	4.14	5.12	5.10	1.72	0.00	0.00	0.00	153.81	166.65	157.78
35049	Santa Fe	9.54	9.54	9.55	10.23	10.23	13.64	3.42	3.30	3.16	0.11	0.11	0.11	55.05	59.70	55.77
35051	Sierra	0.81	0.81	0.81	1.77	1.77	2.36	10.34	10.33	2.31	0.00	0.00	0.00	342.16	390.70	369.86
35053	Socorro	1.36	1.36	1.36	3.01	3.01	4.02	0.59	0.58	0.31	0.00	0.00	0.00	454.47	508.62	425.27
35055	Taos	2.61	2.61	2.61	1.53	1.53	2.03	0.64	0.61	0.50	0.00	0.00	0.00	231.19	253.94	230.57
35057	Torrance	1.06	1.06	1.06	1.14	1.14	1.51	0.67	0.65	0.51	0.00	0.00	0.00	83.74	92.15	86.39
35059	Union	0.88	0.88	0.88	0.26	0.26	0.34	0.35	0.34	0.26	0.00	0.00	0.00	91.11	95.22	90.01
35061	Valencia	3.15	3.15	3.15	4.24	4.24	5.65	0.65	0.62	0.72	0.00	0.00	0.00	41.19	44.98	38.19
Total		**190.98**	**190.94**	**191.07**	**104.84**	**104.84**	**139.77**	**73.46**	**72.04**	**45.07**	**30.86**	**30.86**	**30.86**	**5524.94**	**6092.77**	**5682.10**

Table 4-3. CO emission summaries by major source type for New Mexico counties.

County		Area			On-Road			Off-Road			Points			Biogenic		
CO (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35001	Bernalillo	22.66	22.46	23.06	264.12	264.12	352.15	154.05	149.80	212.72	2.52	2.52	0.22	6.48	7.04	6.19
35003	Catron	0.08	0.08	0.08	1.97	1.97	2.62	0.13	0.13	0.21	0.00	0.00	0.00	120.47	135.77	120.48
35005	Chaves	1.90	1.87	1.95	14.23	14.23	18.96	10.82	10.11	11.89	1.30	1.30	0.24	39.03	41.44	43.48
35006	Cibola	0.94	0.94	0.95	32.45	32.45	43.26	2.23	2.10	2.82	1.20	1.20	0.14	0.00	0.00	0.00
35007	Colfax	0.36	0.35	0.37	28.27	28.27	37.68	9.02	8.81	4.84	0.10	0.10	0.00	61.60	67.57	62.41
35009	Curry	0.91	0.90	0.94	8.90	8.90	11.87	8.74	8.56	9.89	0.00	0.00	0.00	2.41	2.54	2.64
35011	De Baca	0.06	0.06	0.06	1.62	1.62	2.16	4.30	4.29	1.59	0.00	0.00	0.00	7.83	8.78	8.63
35013	Dona Ana	7.91	7.88	7.97	151.02	151.02	201.39	29.18	28.10	31.97	2.84	2.84	0.72	11.39	12.85	13.18
35015	Eddy	2.56	2.53	2.62	13.42	13.42	17.89	15.16	14.17	11.73	7.40	7.40	3.72	13.19	13.82	14.35
35017	Grant	0.91	0.90	0.95	12.91	12.91	17.21	7.16	7.00	5.74	0.00	0.00	0.00	15.96	18.47	18.92
35019	Guadalupe	0.13	0.13	0.13	29.27	29.27	39.02	3.12	3.06	2.18	0.00	0.00	0.00	8.26	9.28	9.14
35021	Harding	0.04	0.04	0.04	0.58	0.58	0.77	0.24	0.24	0.13	0.00	0.00	0.00	11.11	11.94	11.33
35023	Hidalgo	0.10	0.10	0.10	16.05	16.05	21.40	2.34	2.13	1.95	0.00	0.00	0.00	21.04	24.09	24.81
35025	Lea	2.00	1.96	2.07	13.69	13.69	18.25	8.01	7.91	8.44	14.06	14.06	1.39	12.63	13.42	14.18
35027	Lincoln	1.85	1.85	1.86	7.47	7.47	9.96	7.80	7.39	6.61	0.11	0.11	0.22	34.17	38.23	41.09
35028	Los Alamos	0.42	0.42	0.42	1.92	1.92	2.56	1.48	1.32	2.01	0.00	0.00	0.00	0.00	0.00	0.00
35029	Luna	0.55	0.55	0.56	36.02	36.02	48.03	4.80	4.74	4.26	0.00	0.00	0.00	10.96	12.52	13.18

County		Area			On-Road			Off-Road			Points			Biogenic		
CO (tons/day)		Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
35031	McKinley	2.24	2.24	2.25	79.39	79.39	105.86	8.15	7.78	8.42	10.36	10.36	1.86	41.09	44.99	37.61
35033	Mora	0.20	0.20	0.20	3.71	3.71	4.95	3.15	3.15	1.61	0.00	0.00	0.00	26.93	29.65	27.39
35035	Otero	1.99	1.98	2.00	14.83	14.83	19.76	11.11	10.92	8.83	0.80	0.80	0.10	20.90	24.26	23.92
35037	Quay	0.25	0.25	0.26	27.77	27.77	37.02	6.86	6.79	4.41	0.00	0.00	0.00	5.95	6.33	6.31
35039	Rio Arriba	2.26	2.26	2.27	20.72	20.72	27.62	20.97	20.51	8.71	11.88	11.88	7.45	50.64	56.03	50.63
35041	Roosevelt	0.39	0.38	0.40	5.34	5.34	7.12	8.17	8.11	6.71	0.54	0.54	0.00	5.48	5.82	6.01
35043	Sandoval	5.55	5.55	5.57	63.93	63.93	85.21	14.75	13.58	17.45	0.39	0.39	0.02	23.13	25.01	21.74
35045	San Juan	5.07	5.06	5.10	35.60	35.60	47.47	35.12	34.61	30.13	37.76	37.76	14.67	37.45	41.04	35.73
35047	San Miguel	0.51	0.50	0.51	38.76	38.76	51.68	15.28	15.04	7.40	0.00	0.00	0.00	28.32	30.97	29.19
35049	Santa Fe	3.21	3.18	3.26	108.48	108.48	144.61	31.02	29.89	37.03	0.00	0.00	0.11	9.04	9.98	9.20
35051	Sierra	0.37	0.37	0.37	23.17	23.17	30.90	25.10	25.09	6.66	0.00	0.00	0.00	36.45	41.47	39.49
35053	Socorro	0.43	0.43	0.43	39.38	39.38	52.51	2.49	2.32	2.33	0.00	0.00	0.00	67.85	75.97	64.74
35055	Taos	2.07	2.07	2.08	15.77	15.77	21.03	6.61	6.27	5.76	0.00	0.00	0.00	33.55	37.41	33.75
35057	Torrance	0.41	0.41	0.41	11.32	11.32	15.10	3.25	3.05	2.99	0.00	0.00	0.00	15.04	16.82	15.62
35059	Union	0.10	0.10	0.10	2.68	2.68	3.58	1.70	1.55	1.59	0.00	0.00	0.00	13.18	13.86	13.24
35061	Valencia	3.36	3.35	3.37	48.60	48.60	64.80	4.31	4.09	5.48	0.00	0.00	0.00	7.55	8.33	7.15
Total		**71.80**	**71.35**	**72.70**	**1173.35**	**1173.35**	**1564.42**	**466.62**	**452.61**	**474.51**	**91.26**	**91.26**	**30.86**	**799.07**	**885.69**	**825.74**

Table 4-4. Summary of gridded emissions by major source type for states other than New Mexico.

State	Area			On-Road			Off-Road			Points			Anthropogenic		
	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
NOx															
Arizona	184.45	176.71	199.95	312.41	80.59	416.55	175.24	149.55	199.44	500.43	500.43	500.43	1172.54	907.27	1316.369
Arkansa	32.95	31.59	35.68	69.67	69.67	92.89	47.70	42.84	49.74	77.93	77.93	77.93	228.24	222.02	256.2421
California	332.33	324.57	347.85	1599.20	1550.09	2066.79	936.07	834.36	1001.32	245.86	245.86	245.86	3113.47	2954.89	3661.816
Colorado	8.04	7.73	8.64	282.08	223.70	325.42	236.65	236.65	236.65	320.53	319.07	319.31	657.46	654.74	654.6454
Idaho	31.13	29.83	33.73	40.09	75.14	100.19	100.58	95.73	103.90	12.25	12.25	12.25	184.05	212.95	250.0728
Iowa	39.51	37.98	42.57	95.85	109.91	146.55	373.01	361.28	382.59	159.44	159.44	159.44	667.81	668.62	731.1541
Kansas	32.92	31.72	35.31	0.00	169.54	226.05	435.23	417.35	451.66	501.53	501.53	501.53	969.67	1120.14	1214.553
Louisiana	71.69	68.55	77.96	169.54	40.58	54.11	24.57	21.65	26.32	158.24	158.24	158.24	424.05	289.03	316.6345
Minnesota	29.24	28.19	31.34	55.14	220.30	293.73	314.59	290.94	337.15	289.22	289.22	289.22	688.19	828.65	951.4449
Missouri	32.61	31.45	34.91	189.44	173.61	231.48	230.66	217.98	235.12	183.81	183.81	183.81	636.52	606.86	685.3281
Montana	0.08	0.07	0.08	149.56	0.23	0.31	1.21	1.17	1.23	0.00	0.00	0.00	150.85	1.47	1.6234
Nebraska	35.48	34.02	38.42	200.49	108.77	145.03	431.13	421.65	439.56	156.93	156.93	156.93	824.03	721.36	779.9349
Nevada	17.53	16.91	18.77	91.86	113.50	151.33	94.02	72.62	115.11	143.55	143.55	143.55	346.96	346.58	428.759
New Mexico	75.80	72.62	82.15	113.74	154.29	205.73	123.01	114.89	130.00	415.01	415.01	415.01	727.55	756.81	832.8814
Oklahoma	87.88	84.22	95.22	277.81	276.89	369.19	227.51	214.29	233.62	544.50	544.50	544.50	1137.71	1119.90	1242.53
Oregon	2.46	2.38	2.61	4.44	26.51	35.35	21.09	17.95	21.87	3.75	3.75	3.75	31.75	50.60	63.5861
South Dakota	15.26	14.66	16.46	61.68	49.86	66.48	236.39	231.71	239.35	76.82	76.82	76.82	390.15	373.05	399.1115
Texas	70.93	69.18	74.42	1262.06	1282.25	1709.67	816.32	738.40	887.64	2507.82	2507.82	2507.82	4657.13	4597.65	5179.552
Utah	51.71	49.65	55.84	164.82	133.62	178.16	147.82	111.05	181.70	256.78	256.78	256.78	621.13	551.09	672.4711
Wisconsin	1.79	1.72	1.93	13.78	8.72	11.63	6.10	5.63	6.50	1.39	1.39	1.39	23.05	17.45	21.4335
Wyoming	216.57	207.03	235.65	19.60	55.86	74.48	113.74	108.30	117.50	304.67	304.67	304.67	654.59	675.86	732.3119
Grand Total	**1370.35**	**1320.77**	**1469.49**	**6967.84**	**6966.64**	**6970.22**	**5092.64**	**4705.99**	**5397.96**	**6860.46**	**6859.00**	**6859.24**	**18306.89**	**17677.01**	**20392.45**
	Sat	**Sun**	**Wkd**	**Sat**	**Sun**	**Wkd**	**Sat**	**Sun**	**Wkd**	**Sat**	**Sun**	**Wkd**	**Sat**	**Sun**	**Wkd**
VOC															
Arizona	447.68	447.59	447.86	231.79	48.47	309.04	278.42	273.45	178.04	49.55	49.55	49.55	1007.44	819.06	984.4976
Arkansa	133.98	133.96	134.01	43.54	43.54	58.05	78.35	77.46	31.74	31.51	31.51	31.51	287.37	286.47	255.3012
California	1674.27	1673.81	1675.20	1285.75	1250.18	1666.91	1349.03	1328.42	860.57	65.13	65.13	65.13	4374.19	4317.55	4267.814

State	Area			On-Road			Off-Road			Points			Anthropogenic		
	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
Colorado	190.44	190.43	190.45	244.02	264.41	270.73	138.31	138.31	138.31	247.40	243.10	263.82	648.72	644.25	665.6062
Idaho	122.04	122.03	122.08	21.53	50.72	67.62	84.30	83.43	48.12	0.52	0.52	0.52	228.39	256.70	238.329
Iowa	280.80	280.78	280.86	53.66	60.04	80.06	149.69	147.65	105.45	29.41	29.41	29.41	513.57	517.88	495.7744
Kansas	349.06	348.92	349.33	0.00	103.84	138.45	146.94	143.73	115.63	62.90	62.90	62.90	558.89	659.39	666.3093
Louisiana	62.99	62.95	63.08	103.84	26.62	35.49	42.69	42.19	18.56	43.31	43.31	43.31	252.83	175.06	160.4307
Minnesota	478.20	478.18	478.24	38.30	160.81	214.41	155.84	151.20	125.66	51.83	51.83	51.83	724.18	842.03	870.143
Missouri	261.85	261.83	261.90	137.30	114.46	152.62	254.60	252.27	111.59	17.22	17.22	17.22	670.98	645.79	543.3288
Montana	0.40	0.40	0.40	99.77	0.11	0.14	0.82	0.81	0.38	0.00	0.00	0.00	100.99	1.32	0.925
Nebraska	279.72	279.69	279.79	142.51	61.91	82.55	115.36	113.70	88.78	13.40	13.40	13.40	551.00	468.70	464.5121
Nevada	151.02	151.01	151.06	70.98	99.60	132.79	117.76	113.74	77.79	1.17	1.17	1.17	340.92	365.51	362.8073
New Mexico	190.99	190.95	191.08	71.40	104.87	139.83	72.88	71.46	44.49	14.09	14.09	14.09	349.37	381.37	389.4919
Oklahoma	357.37	357.32	357.46	194.30	195.54	260.73	239.63	237.26	112.52	49.61	49.61	49.61	840.91	839.73	780.3249
Oregon	31.31	31.31	31.33	1.37	15.32	20.43	68.77	68.31	23.67	9.45	9.45	9.45	110.90	124.39	84.8843
South Dakota	122.54	122.53	122.54	22.82	26.13	34.84	94.03	93.26	60.42	5.03	5.03	5.03	244.42	246.96	222.8313
Texas	1505.53	1505.48	1505.62	844.66	844.66	1126.22	825.81	811.19	528.16	272.88	272.88	272.88	3448.88	3434.21	3432.889
Utah	248.16	248.13	248.20	119.37	103.05	137.40	167.38	160.47	95.32	10.24	10.24	10.24	545.15	521.89	491.1645
Wisconsin	19.36	19.36	19.37	10.26	4.83	6.43	4.55	4.47	3.13	0.11	0.11	0.11	34.29	28.77	29.0515
Wyoming	60.11	59.99	60.36	11.34	33.10	44.13	61.86	60.96	31.06	34.29	34.29	34.29	167.61	188.35	169.8371
Grand Total	6967.84	6966.64	6970.22	2321.98	2312.02	2341.91	4447.02	4373.77	2799.38	1009.07	1004.77	1025.48	16000.99	15765.37	15576.25
	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
CO															
Arizona	295.10	293.98	297.33	2408.57	549.83	3211.43	1931.95	1883.43	2153.73	73.42	73.42	73.42	4709.03	2800.66	5735.901
Arkansa	43.50	43.31	43.90	467.29	467.29	623.06	342.45	331.15	251.70	25.66	25.66	25.66	878.91	867.41	944.3161
California	760.01	758.22	763.61	12929.34	12562.92	16750.55	9660.54	9443.49	10339.73	209.28	209.28	209.28	23559.18	22973.90	28063.16
Colorado	2.46	2.40	2.59	2307.22	1925.55	2485.22	1875.88	1875.88	1875.88	94.99	91.83	97.93	2851.90	2836.69	2844.035
Idaho	38.83	38.63	39.23	238.21	538.56	718.08	557.59	547.81	514.74	0.83	0.83	0.83	835.47	1125.83	1272.889
Iowa	41.63	41.38	42.12	554.89	620.97	827.97	1217.32	1194.32	1159.97	10.23	10.23	10.23	1824.08	1866.90	2040.289
Kansas	92.20	90.79	95.03	72.78	1078.05	1437.39	1250.19	1215.84	1324.42	248.06	248.06	248.06	1663.24	2632.73	3104.904

State	Area			On-Road			Off-Road			Points			Anthropogenic		
	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd	Sat	Sun	Wkd
Louisiana	33.61	33.13	34.58	1005.27	279.62	372.84	187.73	182.43	152.66	55.32	55.32	55.32	1281.92	550.50	615.3911
Minnesota	84.45	84.25	84.84	395.67	1666.37	2221.85	1748.83	1697.23	1744.29	44.09	44.09	44.09	2273.03	3491.94	4095.061
Missouri	99.28	99.02	99.80	1414.65	1159.69	1546.27	1257.34	1230.95	1014.64	16.80	16.80	16.80	2788.08	2506.45	2677.515
Montana	0.30	0.30	0.30	1024.88	1.14	1.52	3.66	3.59	2.62	0.00	0.00	0.00	1028.83	5.03	4.4405
Nebraska	24.31	24.06	24.80	1422.65	616.64	822.18	932.32	913.92	926.98	23.21	23.21	23.21	2402.49	1577.83	1797.174
Nevada	89.91	89.78	90.16	776.62	1035.14	1380.21	753.01	717.78	861.44	45.39	45.39	45.39	1664.93	1888.09	2377.203
New Mexico	71.80	71.35	72.70	790.61	1173.77	1565.03	460.55	446.54	468.44	60.78	60.78	60.78	1383.74	1752.45	2166.953
Oklahoma	86.48	85.95	87.56	1938.08	1928.25	2571.01	1326.53	1300.23	1158.13	118.05	118.05	118.05	3469.15	3432.48	3934.748
Oregon	16.81	16.80	16.83	12.78	180.60	240.80	251.43	246.94	160.72	11.20	11.20	11.20	292.22	455.54	429.5433
South Dakota	16.06	15.97	16.24	243.16	276.97	369.29	595.48	586.58	530.70	2.00	2.00	2.00	856.70	881.52	918.2293
Texas	324.10	323.27	325.77	8586.97	8586.97	11449.33	6065.89	5921.91	6620.16	1033.63	1033.63	1033.63	16010.60	15865.78	19428.89
Utah	147.15	146.81	147.82	1272.97	1083.57	1444.76	931.06	869.85	874.15	106.63	106.63	106.63	2457.80	2206.85	2573.362
Wisconsin	3.97	3.94	4.03	108.87	57.90	77.19	46.80	45.78	40.27	0.00	0.00	0.00	159.64	107.61	121.4951
Wyoming	50.02	48.68	52.70	133.63	374.01	498.68	331.31	323.13	269.44	135.91	135.91	135.91	650.87	881.73	956.7205
Grand Total	2321.98	2312.02	2341.91	36676.47	35104.85	48997.08	31727.86	30978.76	32444.82	2315.47	2312.31	2318.41	73041.78	70707.94	86102.22

Table 4-5. Gridded biogenic emissions for states other than New Mexico.

	Weekday	Saturday	Sunday
CO (tpd)			
AR	274.7	287.8	338.0
AZ	908.9	847.1	904.2
CA	1755.9	1509.5	1723.4
CO	816.3	870.0	917.4
IA	116.3	125.1	133.6
ID	549.1	473.0	445.6
KS	207.2	232.7	212.7
LA	130.2	151.6	179.8
MN	137.1	175.8	193.3
MO	269.4	305.0	283.2
MT	7.8	10.8	8.3
NE	239.4	313.9	290.7
NV	506.6	538.7	591.6
SD	218.5	349.4	264.8
OK	385.2	384.0	374.3
OR	399.9	257.6	261.2
TX	1104.8	1078.2	1124.8
UT	639.7	610.2	661.9
WY	531.4	615.2	581.2
daily total	**791.1**	**839.3**	**902.3**
	Weekday	**Saturday**	**Sunday**
NOX (tpd)			
AR	10.3	10.8	12.1
AZ	467.6	431.3	453.3
CA	422.2	402.7	433.9
CO	236.8	267.0	265.6
IA	764.9	797.1	836.9
ID	122.6	120.6	114.7
KS	688.4	756.0	709.8
LA	6.6	7.2	8.3
MN	407.2	474.5	500.3
MO	152.8	164.7	156.3
MT	4.2	5.2	4.3
NE	814.5	978.3	943.3
NV	360.5	376.1	398.9
OK	209.3	220.5	196.9
OR	77.0	64.5	60.8
SD	386.5	508.9	459.6
TX	789.6	782.8	752.7
UT	260.4	252.8	271.6
WY	203.4	247.7	238.1
daily total	**192.9**	**219.8**	**222.2**
	Weekday	**Saturday**	**Sunday**
VOC (tpd)			

	Weekday	Saturday	Sunday
AR	2744.2	2932.2	3470.4
AZ	6248.6	5785.2	6081.5
CA	15571.4	13504.0	14721.7
CO	6773.1	7124.6	7478.2
IA	1362.5	1482.9	1559.5
ID	3710.2	3101.8	2868.5
KS	1680.6	1918.4	1713.3
LA	1204.2	1372.6	1776.3
MN	1310.2	1713.8	1886.8
MO	3104.1	3869.8	3457.5
MT	49.1	72.0	50.9
NE	2472.6	3305.7	2869.1
NV	2455.6	2595.3	2834.2
OK	4215.3	4114.5	3844.9
OR	2363.4	1444.4	1468.4
SD	1933.0	3261.0	2204.0
TX	10301.4	8662.9	9712.1
UT	4368.0	4119.0	4333.7
WY	3905.9	4314.9	3976.0
daily total	**6455.0**	**6793.7**	**7230.7**
	Weekday	**Saturday**	**Sunday**
ISOP (tpd)			
AR	1606.1	1744.5	2062.6
AZ	2324.8	2126.3	2178.2
CA	7043.5	6199.2	6387.9
CO	3034.9	3132.1	3274.5
IA	998.9	1091.7	1142.2
ID	1227.0	979.3	872.3
KS	922.7	1066.1	933.5
LA	572.9	636.8	904.9
MN	883.3	1167.4	1284.8
MO	2217.0	2866.0	2525.6
MT	7.9	15.0	7.1
NE	1588.3	2130.4	1791.5
NV	166.3	166.2	161.2
OK	2748.6	2651.9	2417.7
OR	321.3	132.8	141.5
SD	1014.3	1770.9	1098.9
TX	5340.1	3799.9	4634.9
UT	1460.9	1345.5	1324.2
WY	1291.7	1277.9	1112.4
daily total	**2853.1**	**2967.6**	**3120.0**

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Appendix A

Spatial Surrogate Assignments

Table A-1. Area source categories SCCs, and spatial surrogates.

SCC	Surrogate	Source Description
2102001000	Population	Stationary Source Fuel CombustionIndustrialAnthracite CoalTotal: All Boiler Types
2102002000	Population	Stationary Source Fuel CombustionIndustrialBituminous/Subbituminous CoalTotal: All Boiler Types
2102004000	Population	Stationary Source Fuel CombustionIndustrialDistillate OilTotal: Boilers and IC Engines
2102005000	Population	Stationary Source Fuel CombustionIndustrialResidual OilTotal: All Boiler Types
2102006000	Population	Stationary Source Fuel CombustionIndustrialNatural GasTotal: Boilers and IC Engines
2102006002	Population	Stationary Source Fuel CombustionIndustrialNatural GasAll IC Engine Types
2102007000	Population	Stationary Source Fuel CombustionIndustrialLiquified Petroleum Gas (LPG)Total: All Boiler Types
2102008000	Population	Stationary Source Fuel CombustionIndustrialWoodTotal: All Boiler Types
2102011000	Population	Stationary Source Fuel CombustionIndustrialKeroseneTotal: All Boiler Types
2103001000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalAnthracite CoalTotal: All Boiler Types
2103002000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalBituminous/Subbituminous CoalTotal: All Boiler Types
2103004000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalDistillate OilTotal: Boilers and IC Engines
2103005000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalResidual OilTotal: All Boiler Types
2103006000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalNatural GasTotal: Boilers and IC Engines
2103007000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalLiquified Petroleum Gas (LPG)Total: All Combustor Types
2103011000	Population	Stationary Source Fuel CombustionCommercial/InstitutionalKeroseneTotal: All Combustor Types
2104001000	Housing	Stationary Source Fuel CombustionResidentialAnthracite CoalTotal: All Combustor Types
2104002000	Housing	Stationary Source Fuel CombustionResidentialBituminous/Subbituminous CoalTotal: All Combustor Types
2104004000	Housing	Stationary Source Fuel CombustionResidentialDistillate OilTotal: All Combustor Types
2104005000	Housing	Stationary Source Fuel CombustionResidentialResidual OilTotal: All Combustor Types
2104006000	Housing	Stationary Source Fuel CombustionResidentialNatural GasTotal: All Combustor Types
2104007000	Housing	Stationary Source Fuel CombustionResidentialLiquified Petroleum Gas (LPG)Total: All Combustor Types
2104008000	Housing	Stationary Source Fuel CombustionResidentialWoodTotal: Woodstoves and Fireplaces
2104008001	Housing	Stationary Source Fuel CombustionResidentialWoodFireplaces: General
2104008010	Housing	Stationary Source Fuel CombustionResidentialWoodWoodstoves: General
2104008030	Housing	Stationary Source Fuel CombustionResidentialWoodCatalytic Woodstoves: General
2104008050	Housing	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: General
2104008051	Housing	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: Conventional
2104008053	Housing	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: Pellet Fired
2199004000	Population	Stationary Source Fuel CombustionTotal Area Source Fuel CombustionDistillate OilTotal: Boilers and IC Engines
2199011000	Population	Stationary Source Fuel CombustionTotal Area Source Fuel CombustionKeroseneTotal: All Heater Types
2301000000	Population	Industrial ProcessesChemical Manufacturing: SIC 28All ProcessesTotal
2301010000	Population	Industrial ProcessesChemical Manufacturing: SIC 28Industrial Inorganic Chemical ManufacturingTotal

SCC	Surrogate	Source Description
2301020000	Population	Industrial ProcessesChemical Manufacturing: SIC 28Process Emissions from Synthetic Fibers Manuf (NAPAP cat. 107)Total
2301030000	Population	Industrial ProcessesChemical Manufacturing: SIC 28Process Emissions from Pharmaceutical Manuf (NAPAP cat. 106)Total
2301040000	Population	Industrial ProcessesChemical Manufacturing: SIC 28Fugitive Emissions from Synthetic Organic Chem Manuf (NAPAP cat. 102)Total
2302002000	Population	Industrial ProcessesFood and Kindred Products: SIC 20Commercial CharbroilingTotal
2302050000	Population	Industrial ProcessesFood and Kindred Products: SIC 20Bakery ProductsTotal
2302070001	Population	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesBreweries
2302070005	Population	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesWineries
2302070010	Population	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesDistilleries
2302080000	Population	Industrial ProcessesFood and Kindred Products: SIC 20Miscellaneous Food and Kindred ProductsTotal
2304000000	Population	Industrial ProcessesSecondary Metal Production: SIC 33All ProcessesTotal
2305000000	Population	Industrial ProcessesMineral Processes: SIC 32All ProcessesTotal
2306000000	Population	Industrial ProcessesPetroleum Refining: SIC 29All ProcessesTotal
2307060000	Population	Industrial ProcessesWood Products: SIC 24Miscellaneous Wood ProductsTotal
2308000000	Population	Industrial ProcessesRubber/Plastics: SIC 30All ProcessesTotal
2310000000	Rural Area	Industrial ProcessesOil and Gas Production: SIC 13All ProcessesTotal: All Processes
2310010000	Rural Area	Industrial ProcessesOil and Gas Production: SIC 13Crude PetroleumTotal: All Processes
2310020000	Rural Area	Industrial ProcessesOil and Gas Production: SIC 13Natural GasTotal: All Processes
2310030000	Rural Area	Industrial ProcessesOil and Gas Production: SIC 13Natural Gas LiquidsTotal: All Processes
2311000100	Housing	Industrial ProcessesConstruction: SIC 15 - 17All ProcessesWind Erosion
2311010000	Housing	Industrial ProcessesConstruction: SIC 15 - 17General Building ConstructionTotal
2311010070	Housing	Industrial ProcessesConstruction: SIC 15 - 17General Building ConstructionVehicle Traffic
2311020000	Housing	Industrial ProcessesConstruction: SIC 15 - 17Heavy ConstructionTotal
2311030000	Housing	Industrial ProcessesConstruction: SIC 15 - 17Road ConstructionTotal
2325000000	Rural Area	Industrial ProcessesMining and Quarrying: SIC 14All ProcessesTotal
2399000000	Population	Industrial ProcessesIndustrial Processes: NECIndustrial Processes: NECTotal
2401001000	Population	Solvent UtilizationSurface CoatingArchitectural CoatingsTotal: All Solvent Types
2401001999	Population	Solvent UtilizationSurface CoatingArchitectural CoatingsSolvents: NEC
2401005000	Population	Solvent UtilizationSurface CoatingAuto Refinishing: SIC 7532Total: All Solvent Types
2401008000	Population	Solvent UtilizationSurface CoatingTraffic MarkingsTotal: All Solvent Types
2401010000	Population	Solvent UtilizationSurface CoatingTextile Products: SIC 22Total: All Solvent Types
2401015000	Population	Solvent UtilizationSurface CoatingFactory Finished Wood: SIC 2426 thru 242Total: All Solvent Types
2401020000	Population	Solvent UtilizationSurface CoatingWood Furniture: SIC 25Total: All Solvent Types
2401025000	Population	Solvent UtilizationSurface CoatingMetal Furniture: SIC 25Total: All Solvent Types
2401030000	Population	Solvent UtilizationSurface CoatingPaper: SIC 26Total: All Solvent Types

SCC	Surrogate	Source Description
2401040000	Population	Solvent UtilizationSurface CoatingMetal Cans: SIC 341Total: All Solvent Types
2401045000	Population	Solvent UtilizationSurface CoatingMetal Coils: SIC 3498Total: All Solvent Types
2401050000	Population	Solvent UtilizationSurface CoatingMiscellaneous Finished Metals: SIC 34 - (341 + 3498)Total: All Solvent Types
2401055000	Population	Solvent UtilizationSurface CoatingMachinery and Equipment: SIC 35Total: All Solvent Types
2401060000	Population	Solvent UtilizationSurface CoatingLarge Appliances: SIC 363Total: All Solvent Types
2401065000	Population	Solvent UtilizationSurface CoatingElectronic and Other Electrical: SIC 36 - 363Total: All Solvent Types
2401070000	Population	Solvent UtilizationSurface CoatingMotor Vehicles: SIC 371Total: All Solvent Types
2401075000	Population	Solvent UtilizationSurface CoatingAircraft: SIC 372Total: All Solvent Types
2401080000	Population	Solvent UtilizationSurface CoatingMarine: SIC 373Total: All Solvent Types
2401085000	Population	Solvent UtilizationSurface CoatingRailroad: SIC 374Total: All Solvent Types
2401090000	Population	Solvent UtilizationSurface CoatingMiscellaneous ManufacturingTotal: All Solvent Types
2401100000	Population	Solvent UtilizationSurface CoatingIndustrial Maintenance CoatingsTotal: All Solvent Types
2401200000	Population	Solvent UtilizationSurface CoatingOther Special Purpose CoatingsTotal: All Solvent Types
2401990000	Population	Solvent UtilizationSurface CoatingAll Surface Coating CategoriesTotal: All Solvent Types
2415000999	Population	Solvent UtilizationDegreasingAll Processes/All IndustriesSolvents: NEC
2415005000	Population	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): All ProcessesTotal: All Solvent Types
2415010000	Population	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): All ProcessesTotal: All Solvent Types
2415020000	Population	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): All ProcessesTotal: All Solvent Types
2415025000	Population	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): All ProcessesTotal: All Solvent Types
2415030000	Population	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): All ProcessesTotal: All Solvent Types
2415035000	Population	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): All ProcessesTotal: All Solvent Types
2415040000	Population	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): All ProcessesTotal: All Solvent Types
2415045000	Population	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): All ProcessesTotal: All Solvent Types
2415045999	Population	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): All ProcessesSolvents: NEC
2415060000	Population	Solvent UtilizationDegreasingMiscellaneous Repair Services (SIC 76): All ProcessesTotal: All Solvent Types
2415065000	Population	Solvent UtilizationDegreasingAuto Repair Services (SIC 75): All ProcessesTotal: All Solvent Types
2415100000	Population	Solvent UtilizationDegreasingAll Industries: Open Top DegreasingTotal: All Solvent Types
2415105000	Population	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Open Top DegreasingTotal: All Solvent Types
2415110000	Population	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): Open Top DegreasingTotal: All Solvent Types
2415120000	Population	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): Open Top DegreasingTotal: All Solvent Types
2415125000	Population	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): Open Top DegreasingTotal: All Solvent Types
2415130000	Population	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): Open Top DegreasingTotal: All Solvent Types
2415135000	Population	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): Open Top DegreasingTotal: All Solvent Types
2415140000	Population	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): Open Top DegreasingTotal: All Solvent Types

SCC	Surrogate	Source Description
2415145000	Population	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): Open Top DegreasingTotal: All Solvent Types
2415200000	Population	Solvent UtilizationDegreasingAll Industries: Conveyerized DegreasingTotal: All Solvent Types
2415205000	Population	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Conveyerized DegreasingTotal: All Solvent Types
2415300000	Population	Solvent UtilizationDegreasingAll Industries: Cold CleaningTotal: All Solvent Types
2415305000	Population	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Cold CleaningTotal: All Solvent Types
2415310000	Population	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): Cold CleaningTotal: All Solvent Types
2415320000	Population	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): Cold CleaningTotal: All Solvent Types
2415325000	Population	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): Cold CleaningTotal: All Solvent Types
2415330000	Population	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): Cold CleaningTotal: All Solvent Types
2415335000	Population	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): Cold CleaningTotal: All Solvent Types
2415340000	Population	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): Cold CleaningTotal: All Solvent Types
2415345000	Population	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): Cold CleaningTotal: All Solvent Types
2415355000	Population	Solvent UtilizationDegreasingAutomotive Dealers (SIC 55): Cold CleaningTotal: All Solvent Types
2415360000	Population	Solvent UtilizationDegreasingAuto Repair Services (SIC 75): Cold CleaningTotal: All Solvent Types
2415365000	Population	Solvent UtilizationDegreasingMiscellaneous Repair Services (SIC 76): Cold CleaningTotal: All Solvent Types
2420000000	Population	Solvent UtilizationDry CleaningAll ProcessesTotal: All Solvent Types
2420000055	Population	Solvent UtilizationDry CleaningAll ProcessesPerchloroethylene
2420000370	Population	Solvent UtilizationDry CleaningAll ProcessesSpecial Naphthas
2420000999	Population	Solvent UtilizationDry CleaningAll ProcessesSolvents: NEC
2420010055	Population	Solvent UtilizationDry CleaningCommercial/Industrial CleanersPerchloroethylene
2420010370	Population	Solvent UtilizationDry CleaningCommercial/Industrial CleanersSpecial Naphthas
2420020055	Population	Solvent UtilizationDry CleaningCoin-operated CleanersPerchloroethylene
2425000000	Population	Solvent UtilizationGraphic ArtsAll ProcessesTotal: All Solvent Types
2430000000	Population	Solvent UtilizationRubber/PlasticsAll ProcessesTotal: All Solvent Types
2440000000	Population	Solvent UtilizationMiscellaneous IndustrialAll ProcessesTotal: All Solvent Types
2440020000	Population	Solvent UtilizationMiscellaneous IndustrialAdhesive (Industrial) ApplicationTotal: All Solvent Types
2460000000	Population	Solvent UtilizationMiscellaneous Non-industrial: Consumer and CommercialAll ProcessesTotal: All Solvent Types
2460500000	Population	Solvent UtilizationMiscellaneous Non-industrial: Consumer and CommercialAll Coatings and Related ProductsTotal: All Solvent Types
2461020000	Population	Solvent UtilizationMiscellaneous Non-industrial: CommercialAsphalt Application: All ProcessesTotal: All Solvent Types
2461021000	Population	Solvent UtilizationMiscellaneous Non-industrial: CommercialCutback AsphaltTotal: All Solvent Types
2461022000	Population	Solvent UtilizationMiscellaneous Non-industrial: CommercialEmulsified AsphaltTotal: All Solvent Types
2461023000	Population	Solvent UtilizationMiscellaneous Non-industrial: CommercialAsphalt RoofingTotal: All Solvent Types
2461600000	Population	Solvent UtilizationMiscellaneous Non-industrial: Commercial
2461800000	Population	Solvent UtilizationMiscellaneous Non-industrial: CommercialPesticide Application: All ProcessesTotal: All Solvent Types

SCC	Surrogate	Source Description
2461850000	Agriculture	Solvent UtilizationMiscellaneous Non-industrial: CommercialPesticide Application: AgriculturalAll Processes
2465000000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAll Products/ProcessesTotal: All Solvent Types
2465100000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerPersonal Care ProductsTotal: All Solvent Types
2465200000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerHousehold ProductsTotal: All Solvent Types
2465400000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAutomotive Aftermarket ProductsTotal: All Solvent Types
2465600000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAdhesives and SealantsTotal: All Solvent Types
2465800000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerPesticide ApplicationTotal: All Solvent Types
2465900000	Population	Solvent UtilizationMiscellaneous Non-industrial: ConsumerMiscellaneous Products: NECTotal: All Solvent Types
2495000000	Population	Solvent UtilizationAll Solvent User CategoriesAll ProcessesTotal: All Solvent Types
2501000000	Rural Area	Storage and TransportPetroleum and Petroleum Product StorageAll Storage Types: Breathing LossTotal: All Products
2501050000	Rural Area	Storage and TransportPetroleum and Petroleum Product StorageBulk Stations/Terminals: Breathing LossTotal: All Products
2501050120	Rural Area	Storage and TransportPetroleum and Petroleum Product StorageBulk Stations/Terminals: Breathing LossGasoline
2501060000	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsTotal: All Gasoline/All Processes
2501060050	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Total
2501060052	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Splash Filling
2501060053	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Balanced Submerged Filling
2501060100	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Total
2501060101	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Displacement Loss/Uncontrolled
2501060102	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Displacement Loss/Controlled
2501060103	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Spillage
2501060200	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsUnderground Tank: Total
2501060201	Population	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsUnderground Tank: Breathing and Emptying
2501995000	Rural Area	Storage and TransportPetroleum and Petroleum Product StorageAll Storage Types: Working LossTotal: All Products
2505000120	Population	Storage and TransportPetroleum and Petroleum Product TransportAll Transport TypesGasoline
2505010000	Railroads	Storage and TransportPetroleum and Petroleum Product TransportRail Tank CarTotal: All Products
2505020030	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselCrude Oil
2505020060	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselResidual Oil
2505020090	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselDistillate Oil
2505020120	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselGasoline
2505020121	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine Vessel
2505020150	Ports	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselJet Naphtha
2505030000	Population	Storage and TransportPetroleum and Petroleum Product TransportTruckTotal: All Products
2505030120	Population	Storage and TransportPetroleum and Petroleum Product TransportTruckGasoline
2601010000	Population	Waste Disposal, Treatment, and RecoveryOn-site IncinerationIndustrialTotal

SCC	Surrogate	Source Description
2601020000	Population	Waste Disposal, Treatment, and RecoveryOn-site IncinerationCommercial/InstitutionalTotal
2601030000	Housing	Waste Disposal, Treatment, and RecoveryOn-site IncinerationResidentialTotal
2610000000	Rural Area	Waste Disposal, Treatment, and RecoveryOpen BurningAll CategoriesTotal
2610010000	Rural Area	Waste Disposal, Treatment, and RecoveryOpen BurningIndustrialTotal
2610020000	Rural Area	Waste Disposal, Treatment, and RecoveryOpen BurningCommercial/InstitutionalTotal
2610030000	Housing	Waste Disposal, Treatment, and RecoveryOpen BurningResidentialHousehold Waste (use 26-10-000-xxx for Yard Wastes)
2620000000	Rural Area	Waste Disposal, Treatment, and RecoveryLandfillsAll CategoriesTotal
2620030000	Rural Area	Waste Disposal, Treatment, and RecoveryLandfillsMunicipalTotal
2630000000	Rural Area	Waste Disposal, Treatment, and RecoveryWastewater TreatmentAll CategoriesTotal Processed
2630020000	Rural Area	Waste Disposal, Treatment, and RecoveryWastewater TreatmentPublic OwnedTotal Processed
2640000000	Rural Area	Waste Disposal, Treatment, and RecoveryTSDFsAll TSDF TypesTotal: All Processes
2640000004	Rural Area	Waste Disposal, Treatment, and RecoveryTSDFsAll TSDF TypesTransfer, Storage, and Handling
2660000000	Population	Waste Disposal, Treatment, and RecoveryLeaking Underground Storage TanksLeaking Underground Storage TanksTotal: All Storage Types
2710020030	Rural Area	Natural SourcesAgriculture Production - LivestockHorses and Ponies CompositeTotal
2730050000	Rural Area	Natural SourcesGeogenicGeyser/GeothermalTotal
2801000000	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTotal
2801000001	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsLand Breaking
2801000003	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTilling
2801000005	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsHarvesting
2801000008	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTransport
2801501000	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgricultural Propaning - tractor-pulled burners to burn stubble onlyTotal, all crop types
2801502000	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsAgricultural Stack Burning - straw stacks moved from field for burningTotal, all crop types
2801520000	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsOrchard HeatersTotal, all fuels
2801520004	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsOrchard HeatersDiesel
2801700001	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAnhydrous Ammonia
2801700002	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAqua Ammonia
2801700003	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationNitrogen Solutions
2801700004	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationUrea
2801700005	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Nitrate
2801700006	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Sulfate
2801700007	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Thiosulfate
2801700008	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationOther Straight Nitrogen
2801700009	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Phosphates
2801700010	Agriculture	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationN-P-K

SCC	Surrogate	Source Description
2805000000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockAgriculture - LivestockTotal
2805001000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockBeef Cattle FeedlotsTotal (also see 2805020000)
2805020000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockCattle and Calves CompositeTotal
2805025000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockHogs and Pigs CompositeTotal
2805030000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockPoultry and Chickens CompositeTotal
2805035000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockHorses and Ponies CompositeTotal
2805040000	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockSheep and Lambs CompositeTotal
2805045001	Agriculture	Miscellaneous Area SourcesAgriculture Production - LivestockGoatsTotal
2810010000	Population	Miscellaneous Area SourcesOther CombustionHuman PerspirationTotal
2810025000	Housing	Miscellaneous Area SourcesOther CombustionCharcoal GrillingTotal
2810030000	Housing	Miscellaneous Area SourcesOther CombustionStructure FiresTotal
2810050000	Housing	Miscellaneous Area SourcesOther CombustionMotor Vehicle FiresTotal
2830000000	Rural Area	Miscellaneous Area SourcesCatastrophic/Accidental ReleasesAll Catastrophic/Accidential ReleasesTotal

Table A-2. Off-road mobile source categories, SCCs, and spatial surrogates.

SCC	Spatial Surrogate	Source Description
2200005000	Agricultural land	Agricultural Equipment
2200006000	Urban land	Commercial Equipment
2200002000	Population	Construction and Mining Equipment
2200003000	Population	Industrial Equipment
2200004000	Urban land	Lawn and Garden Equipment (Com)
2200004001	Population	Lawn and Garden Equipment (Res)
2200007000	Forest land	Logging Equipment
2282000000	Water	Pleasure Craft
2285004000	Railroads	Railroad Equipment
2200001000	Inverse population	Recreational Equipment
2285002005	Railroads	Locomotives

Table A-3. On-road mobile source categories, SCCs, and spatial surrogates (non-California states).

SCC	Spatial Surrogate	Vehicle Class	Facility Type
2201001110	Rural primary roads	LDGV	Rural Interstate
2201001130	Rural primary roads	LDGV	Rural Other Principal Arterial
2201001150	Rural secondary roads	LDGV	Rural Minor Arterial
2201001170	Rural primary roads	LDGV	Rural Major Collector
2201001190	Rural secondary roads	LDGV	Rural Minor Collector
2201001210	Rural secondary roads	LDGV	Rural Local
2201001230	Urban primary roads	LDGV	Urban Interstate
2201001250	Urban primary roads	LDGV	Urban Other Freeways and Expressways
2201001270	Urban primary roads	LDGV	Urban Other Principal Arterial
2201001290	Urban secondary roads	LDGV	Urban Minor Arterial
2201001310	Urban secondary roads	LDGV	Urban Collector
2201001330	Urban secondary roads	LDGV	Urban Local
2201020110	Rural primary roads	LDGT1	Rural Interstate
2201020130	Rural primary roads	LDGT1	Rural Other Principal Arterial
2201020150	Rural secondary roads	LDGT1	Rural Minor Arterial
2201020170	Rural primary roads	LDGT1	Rural Major Collector
2201020190	Rural secondary roads	LDGT1	Rural Minor Collector
2201020210	Rural secondary roads	LDGT1	Rural Local
2201020230	Urban primary roads	LDGT1	Urban Interstate
2201020250	Urban primary roads	LDGT1	Urban Other Freeways and Expressways
2201020270	Urban primary roads	LDGT1	Urban Other Principal Arterial
2201020290	Urban secondary roads	LDGT1	Urban Minor Arterial
2201020310	Urban secondary roads	LDGT1	Urban Collector
2201020330	Urban secondary roads	LDGT1	Urban Local
2201040110	Rural primary roads	LDGT2	Rural Interstate
2201040130	Rural primary roads	LDGT2	Rural Other Principal Arterial
2201040150	Rural secondary roads	LDGT2	Rural Minor Arterial
2201040170	Rural primary roads	LDGT2	Rural Major Collector
2201040190	Rural secondary roads	LDGT2	Rural Minor Collector
2201040210	Rural secondary roads	LDGT2	Rural Local
2201040230	Urban primary roads	LDGT2	Urban Interstate
2201040250	Urban primary roads	LDGT2	Urban Other Freeways and Expressways
2201040270	Urban primary roads	LDGT2	Urban Other Principal Arterial
2201040290	Urban secondary roads	LDGT2	Urban Minor Arterial
2201040310	Urban secondary roads	LDGT2	Urban Collector

SCC	Spatial Surrogate	Vehicle Class	Facility Type
2201040330	Urban secondary roads	LDGT2	Urban Local
2201070110	Rural primary roads	HDGV	Rural Interstate
2201070130	Rural primary roads	HDGV	Rural Other Principal Arterial
2201070150	Rural secondary roads	HDGV	Rural Minor Arterial
2201070170	Rural primary roads	HDGV	Rural Major Collector
2201070190	Rural secondary roads	HDGV	Rural Minor Collector
2201070210	Rural secondary roads	HDGV	Rural Local
2201070230	Urban primary roads	HDGV	Urban Interstate
2201070250	Urban primary roads	HDGV	Urban Other Freeways and Expressways
2201070270	Urban primary roads	HDGV	Urban Other Principal Arterial
2201070290	Urban secondary roads	HDGV	Urban Minor Arterial
2201070310	Urban secondary roads	HDGV	Urban Collector
2201070330	Urban secondary roads	HDGV	Urban Local
2201080110	Rural primary roads	MC	Rural Interstate
2201080130	Rural primary roads	MC	Rural Other Principal Arterial
2201080150	Rural secondary roads	MC	Rural Minor Arterial
2201080170	Rural primary roads	MC	Rural Major Collector
2201080190	Rural secondary roads	MC	Rural Minor Collector
2201080210	Rural secondary roads	MC	Rural Local
2201080230	Urban primary roads	MC	Urban Interstate
2201080250	Urban primary roads	MC	Urban Other Freeways and Expressways
2201080270	Urban primary roads	MC	Urban Other Principal Arterial
2201080290	Urban secondary roads	MC	Urban Minor Arterial
2201080310	Urban secondary roads	MC	Urban Collector
2201080330	Urban secondary roads	MC	Urban Local
2230001110	Rural primary roads	LDDV	Rural Interstate
2230001130	Rural primary roads	LDDV	Rural Other Principal Arterial
2230001150	Rural secondary roads	LDDV	Rural Minor Arterial
2230001170	Rural primary roads	LDDV	Rural Major Collector
2230001190	Rural secondary roads	LDDV	Rural Minor Collector
2230001210	Rural secondary roads	LDDV	Rural Local
2230001230	Urban primary roads	LDDV	Urban Interstate
2230001250	Urban primary roads	LDDV	Urban Other Freeways and Expressways
2230001270	Urban primary roads	LDDV	Urban Other Principal Arterial
2230001290	Urban secondary roads	LDDV	Urban Minor Arterial
2230001310	Urban secondary roads	LDDV	Urban Collector
2230001330	Urban secondary roads	LDDV	Urban Local
2230060110	Rural primary roads	LDDT	Rural Interstate
2230060130	Rural primary roads	LDDT	Rural Other Principal Arterial
2230060150	Rural secondary roads	LDDT	Rural Minor Arterial
2230060170	Rural primary roads	LDDT	Rural Major Collector
2230060190	Rural secondary roads	LDDT	Rural Minor Collector
2230060210	Rural secondary roads	LDDT	Rural Local
2230060230	Urban primary roads	LDDT	Urban Interstate
2230060250	Urban primary roads	LDDT	Urban Other Freeways and Expressways
2230060270	Urban primary roads	LDDT	Urban Other Principal Arterial
2230060290	Urban secondary roads	LDDT	Urban Minor Arterial
2230060310	Urban secondary roads	LDDT	Urban Collector
2230060330	Urban secondary roads	LDDT	Urban Local
2230070110	Rural primary roads	HDDV	Rural Interstate
2230070130	Rural primary roads	HDDV	Rural Other Principal Arterial

SCC	Spatial Surrogate	Vehicle Class	Facility Type
2230070150	Rural secondary roads	HDDV	Rural Minor Arterial
2230070170	Rural primary roads	HDDV	Rural Major Collector
2230070190	Rural secondary roads	HDDV	Rural Minor Collector
2230070210	Rural secondary roads	HDDV	Rural Local
2230070230	Urban primary roads	HDDV	Urban Interstate
2230070250	Urban primary roads	HDDV	Urban Other Freeways and Expressways
2230070270	Urban primary roads	HDDV	Urban Other Principal Arterial
2230070290	Urban secondary roads	HDDV	Urban Minor Arterial
2230070310	Urban secondary roads	HDDV	Urban Collector
2230070330	Urban secondary roads	HDDV	Urban Local
2294000000	Urban & rural primary, urban secondary roads	N/A	Paved road dust
2296000000	Rural secondary roads	N/A	Unpaved road dust

Table A-4. On-road mobile source categories SCCs, and spatial surrogates (California only).

SCC	Spatial Surrogate	Vehicle Class
2230070000	Population weighted roadways	HDDV
2230060000	Population weighted roadways	LDDV
2230000000	Population weighted roadways	LDDV
2201070000	Population weighted roadways	HDGV
2201020000	Population weighted roadways	LDGT1
2201040000	Population weighted roadways	LDGT2
2201000000	Population weighted roadways	LDGV
2201080000	Population weighted roadways	MC
2294000000	Urban & rural primary, urban secondary roads	Paved road dust
2296000000	Rural secondary roads	Unpaved road dust

Table A-5. Individual source categories included in each sub-category for emissions tabulations.

SCC	Sub-Category	Source Description
2102001000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialAnthracite CoalTotal: All Boiler Types
2102002000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialBituminous/Subbituminous CoalTotal: All Boiler Types
2102004000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialDistillate OilTotal: Boilers and IC Engines
2102005000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialResidual OilTotal: All Boiler Types
2102006000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialNatural GasTotal: Boilers and IC Engines
2102006002	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialNatural GasAll IC Engine Types
2102007000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialLiquified Petroleum Gas (LPG)Total: All Boiler Types
2102008000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialWoodTotal: All Boiler Types
2102011000	Other Fuel Combustion	Stationary Source Fuel CombustionIndustrialKeroseneTotal: All Boiler Types
2103001000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalAnthracite CoalTotal: All Boiler Types
2103002000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalBituminous/Subbituminous CoalTotal: All Boiler Types
2103004000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalDistillate OilTotal: Boilers and IC Engines
2103005000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalResidual OilTotal: All Boiler Types
2103006000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalNatural GasTotal: Boilers and IC Engines
2103007000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalLiquified Petroleum Gas (LPG)Total: All Combustor Types
2103011000	Other Fuel Combustion	Stationary Source Fuel CombustionCommercial/InstitutionalKeroseneTotal: All Combustor Types
2104001000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialAnthracite CoalTotal: All Combustor Types
2104002000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialBituminous/Subbituminous CoalTotal: All Combustor Types
2104004000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialDistillate OilTotal: All Combustor Types
2104005000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialResidual OilTotal: All Combustor Types
2104006000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialNatural GasTotal: All Combustor Types
2104007000	Other Fuel Combustion	Stationary Source Fuel CombustionResidentialLiquified Petroleum Gas (LPG)Total: All Combustor Types
2104008000	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodTotal: Woodstoves and Fireplaces
2104008001	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodFireplaces: General
2104008010	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodWoodstoves: General
2104008030	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodCatalytic Woodstoves: General
2104008050	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: General
2104008051	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: Conventional
2104008053	Residential Wood Combustion	Stationary Source Fuel CombustionResidentialWoodNon-catalytic Woodstoves: Pellet Fired
2199004000	Other Fuel Combustion	Stationary Source Fuel CombustionTotal Area Source Fuel CombustionDistillate OilTotal: Boilers and IC Engines

SCC	Sub-Category	Source Description
2199011000	Other Fuel Combustion	Stationary Source Fuel CombustionTotal Area Source Fuel CombustionKeroseneTotal: All Heater Types
2301000000	Industrial Processes	Industrial ProcessesChemical Manufacturing: SIC 28All ProcessesTotal
2301010000	Industrial Processes	Industrial ProcessesChemical Manufacturing: SIC 28Industrial Inorganic Chemical ManufacturingTotal
2301020000	Industrial Processes	Industrial ProcessesChemical Manufacturing: SIC 28Process Emissions from Synthetic Fibers Manuf (NAPAP cat. 107)Total
2301030000	Industrial Processes	Industrial ProcessesChemical Manufacturing: SIC 28Process Emissions from Pharmaceutical Manuf (NAPAP cat. 106)Total
2301040000	Industrial Processes	Industrial ProcessesChemical Manufacturing: SIC 28Fugitive Emissions from Synthetic Organic Chem Manuf (NAPAP cat. 102) Total
2302002000	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Commercial CharbroilingTotal
2302050000	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Bakery ProductsTotal
2302070001	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesBreweries
2302070005	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesWineries
2302070010	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Fermentation/BeveragesDistilleries
2302080000	Industrial Processes	Industrial ProcessesFood and Kindred Products: SIC 20Miscellaneous Food and Kindred ProductsTotal
2304000000	Industrial Processes	Industrial ProcessesSecondary Metal Production: SIC 33All ProcessesTotal
2305000000	Industrial Processes	Industrial ProcessesMineral Processes: SIC 32All ProcessesTotal
2306000000	Industrial Processes	Industrial ProcessesPetroleum Refining: SIC 29All ProcessesTotal
2307060000	Industrial Processes	Industrial ProcessesWood Products: SIC 24Miscellaneous Wood ProductsTotal
2308000000	Industrial Processes	Industrial ProcessesRubber/Plastics: SIC 30All ProcessesTotal
2310000000	Industrial Processes	Industrial ProcessesOil and Gas Production: SIC 13All ProcessesTotal: All Processes
2310010000	Industrial Processes	Industrial ProcessesOil and Gas Production: SIC 13Crude PetroleumTotal: All Processes
2310020000	Industrial Processes	Industrial ProcessesOil and Gas Production: SIC 13Natural GasTotal: All Processes
2310030000	Industrial Processes	Industrial ProcessesOil and Gas Production: SIC 13Natural Gas LiquidsTotal: All Processes
2311000100	Industrial Processes	Industrial ProcessesConstruction: SIC 15 - 17All ProcessesWind Erosion
2311010000	Industrial Processes	Industrial ProcessesConstruction: SIC 15 - 17General Building ConstructionTotal
2311010070	Industrial Processes	Industrial ProcessesConstruction: SIC 15 - 17General Building ConstructionVehicle Traffic
2311020000	Industrial Processes	Industrial ProcessesConstruction: SIC 15 - 17Heavy ConstructionTotal
2311030000	Industrial Processes	Industrial ProcessesConstruction: SIC 15 - 17Road ConstructionTotal
2325000000	Industrial Processes	Industrial ProcessesMining and Quarrying: SIC 14All ProcessesTotal
2399000000	Industrial Processes	Industrial ProcessesIndustrial Processes: NECIndustrial Processes: NECTotal
2401001000	Solvent Utilization	Solvent UtilizationSurface CoatingArchitectural CoatingsTotal: All Solvent Types
2401001999	Solvent Utilization	Solvent UtilizationSurface CoatingArchitectural CoatingsSolvents: NEC

SCC	Sub-Category	Source Description
2401005000	Solvent Utilization	Solvent UtilizationSurface CoatingAuto Refinishing: SIC 7532Total: All Solvent Types
2401008000	Solvent Utilization	Solvent UtilizationSurface CoatingTraffic MarkingsTotal: All Solvent Types
2401010000	Solvent Utilization	Solvent UtilizationSurface CoatingTextile Products: SIC 22Total: All Solvent Types
2401015000	Solvent Utilization	Solvent UtilizationSurface CoatingFactory Finished Wood: SIC 2426 thru 242Total: All Solvent Types
2401020000	Solvent Utilization	Solvent UtilizationSurface CoatingWood Furniture: SIC 25Total: All Solvent Types
2401025000	Solvent Utilization	Solvent UtilizationSurface CoatingMetal Furniture: SIC 25Total: All Solvent Types
2401030000	Solvent Utilization	Solvent UtilizationSurface CoatingPaper: SIC 26Total: All Solvent Types
2401040000	Solvent Utilization	Solvent UtilizationSurface CoatingMetal Cans: SIC 341Total: All Solvent Types
2401045000	Solvent Utilization	Solvent UtilizationSurface CoatingMetal Coils: SIC 3498Total: All Solvent Types
2401050000	Solvent Utilization	Solvent UtilizationSurface CoatingMiscellaneous Finished Metals: SIC 34 - (341 + 3498)Total: All Solvent Types
2401055000	Solvent Utilization	Solvent UtilizationSurface CoatingMachinery and Equipment: SIC 35Total: All Solvent Types
2401060000	Solvent Utilization	Solvent UtilizationSurface CoatingLarge Appliances: SIC 363Total: All Solvent Types
2401065000	Solvent Utilization	Solvent UtilizationSurface CoatingElectronic and Other Electrical: SIC 36 - 363Total: All Solvent Types
2401070000	Solvent Utilization	Solvent UtilizationSurface CoatingMotor Vehicles: SIC 371Total: All Solvent Types
2401075000	Solvent Utilization	Solvent UtilizationSurface CoatingAircraft: SIC 372Total: All Solvent Types
2401080000	Solvent Utilization	Solvent UtilizationSurface CoatingMarine: SIC 373Total: All Solvent Types
2401085000	Solvent Utilization	Solvent UtilizationSurface CoatingRailroad: SIC 374Total: All Solvent Types
2401090000	Solvent Utilization	Solvent UtilizationSurface CoatingMiscellaneous ManufacturingTotal: All Solvent Types
2401100000	Solvent Utilization	Solvent UtilizationSurface CoatingIndustrial Maintenance CoatingsTotal: All Solvent Types
2401200000	Solvent Utilization	Solvent UtilizationSurface CoatingOther Special Purpose CoatingsTotal: All Solvent Types
2401990000	Solvent Utilization	Solvent UtilizationSurface CoatingAll Surface Coating CategoriesTotal: All Solvent Types
2415000999	Solvent Utilization	Solvent UtilizationDegreasingAll Processes/All IndustriesSolvents: NEC
2415005000	Solvent Utilization	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): All ProcessesTotal: All Solvent Types
2415010000	Solvent Utilization	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): All ProcessesTotal: All Solvent Types
2415020000	Solvent Utilization	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): All ProcessesTotal: All Solvent Types
2415025000	Solvent Utilization	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): All ProcessesTotal: All Solvent Types
2415030000	Solvent Utilization	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): All ProcessesTotal: All Solvent Types
2415035000	Solvent Utilization	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): All ProcessesTotal: All Solvent Types
2415040000	Solvent Utilization	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): All ProcessesTotal: All Solvent Types
2415045000	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): All ProcessesTotal: All Solvent Types

SCC	Sub-Category	Source Description
2415045999	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): All ProcessesSolvents: NEC
2415060000	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Repair Services (SIC 76): All ProcessesTotal: All Solvent Types
2415065000	Solvent Utilization	Solvent UtilizationDegreasingAuto Repair Services (SIC 75): All ProcessesTotal: All Solvent Types
2415100000	Solvent Utilization	Solvent UtilizationDegreasingAll Industries: Open Top DegreasingTotal: All Solvent Types
2415105000	Solvent Utilization	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Open Top DegreasingTotal: All Solvent Types
2415110000	Solvent Utilization	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): Open Top DegreasingTotal: All Solvent Types
2415120000	Solvent Utilization	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): Open Top DegreasingTotal: All Solvent Types
2415125000	Solvent Utilization	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): Open Top DegreasingTotal: All Solvent Types
2415130000	Solvent Utilization	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): Open Top DegreasingTotal: All Solvent Types
2415135000	Solvent Utilization	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): Open Top DegreasingTotal: All Solvent Types
2415140000	Solvent Utilization	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): Open Top DegreasingTotal: All Solvent Types
2415145000	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): Open Top DegreasingTotal: All Solvent Types
2415200000	Solvent Utilization	Solvent UtilizationDegreasingAll Industries: Conveyerized DegreasingTotal: All Solvent Types
2415205000	Solvent Utilization	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Conveyerized DegreasingTotal: All Solvent Types
2415300000	Solvent Utilization	Solvent UtilizationDegreasingAll Industries: Cold CleaningTotal: All Solvent Types
2415305000	Solvent Utilization	Solvent UtilizationDegreasingFurniture and Fixtures (SIC 25): Cold CleaningTotal: All Solvent Types
2415310000	Solvent Utilization	Solvent UtilizationDegreasingPrimary Metal Industries (SIC 33): Cold CleaningTotal: All Solvent Types
2415320000	Solvent Utilization	Solvent UtilizationDegreasingFabricated Metal Products (SIC 34): Cold CleaningTotal: All Solvent Types
2415325000	Solvent Utilization	Solvent UtilizationDegreasingIndustrial Machinery and Equipment (SIC 35): Cold CleaningTotal: All Solvent Types
2415330000	Solvent Utilization	Solvent UtilizationDegreasingElectronic and Other Elec. (SIC 36): Cold CleaningTotal: All Solvent Types
2415335000	Solvent Utilization	Solvent UtilizationDegreasingTransportation Equipment (SIC 37): Cold CleaningTotal: All Solvent Types
2415340000	Solvent Utilization	Solvent UtilizationDegreasingInstruments and Related Products (SIC 38): Cold CleaningTotal: All Solvent Types
2415345000	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Manufacturing (SIC 39): Cold CleaningTotal: All Solvent Types
2415355000	Solvent Utilization	Solvent UtilizationDegreasingAutomotive Dealers (SIC 55): Cold CleaningTotal: All Solvent Types
2415360000	Solvent Utilization	Solvent UtilizationDegreasingAuto Repair Services (SIC 75): Cold CleaningTotal: All Solvent Types
2415365000	Solvent Utilization	Solvent UtilizationDegreasingMiscellaneous Repair Services (SIC 76): Cold CleaningTotal: All Solvent Types
2420000000	Solvent Utilization	Solvent UtilizationDry CleaningAll ProcessesTotal: All Solvent Types
2420000055	Solvent Utilization	Solvent UtilizationDry CleaningAll ProcessesPerchloroethylene
2420000370	Solvent Utilization	Solvent UtilizationDry CleaningAll ProcessesSpecial Naphthas
2420000999	Solvent Utilization	Solvent UtilizationDry CleaningAll ProcessesSolvents: NEC

SCC	Sub-Category	Source Description
2420010055	Solvent Utilization	Solvent UtilizationDry CleaningCommercial/Industrial CleanersPerchloroethylene
2420010370	Solvent Utilization	Solvent UtilizationDry CleaningCommercial/Industrial CleanersSpecial Naphthas
2420020055	Solvent Utilization	Solvent UtilizationDry CleaningCoin-operated CleanersPerchloroethylene
2425000000	Solvent Utilization	Solvent UtilizationGraphic ArtsAll ProcessesTotal: All Solvent Types
2430000000	Solvent Utilization	Solvent UtilizationRubber/PlasticsAll ProcessesTotal: All Solvent Types
2440000000	Solvent Utilization	Solvent UtilizationMiscellaneous IndustrialAll ProcessesTotal: All Solvent Types
2440020000	Solvent Utilization	Solvent UtilizationMiscellaneous IndustrialAdhesive (Industrial) ApplicationTotal: All Solvent Types
2460000000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: Consumer and CommercialAll ProcessesTotal: All Solvent Types
2460500000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: Consumer and CommercialAll Coatings and Related ProductsTotal: All Solvent Types
2461020000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialAsphalt Application: All ProcessesTotal: All Solvent Types
2461021000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialCutback AsphaltTotal: All Solvent Types
2461022000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialEmulsified AsphaltTotal: All Solvent Types
2461023000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialAsphalt RoofingTotal: All Solvent Types
2461600000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: Commercial
2461800000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialPesticide Application: All ProcessesTotal: All Solvent Types
2461850000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: CommercialPesticide Application: AgriculturalAll Processes
2465000000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAll Products/ProcessesTotal: All Solvent Types
2465100000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerPersonal Care ProductsTotal: All Solvent Types
2465200000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerHousehold ProductsTotal: All Solvent Types
2465400000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAutomotive Aftermarket ProductsTotal: All Solvent Types
2465600000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerAdhesives and SealantsTotal: All Solvent Types
2465800000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerPesticide ApplicationTotal: All Solvent Types
2465900000	Solvent Utilization	Solvent UtilizationMiscellaneous Non-industrial: ConsumerMiscellaneous Products: NECTotal: All Solvent Types
2495000000	Solvent Utilization	Solvent UtilizationAll Solvent User CategoriesAll ProcessesTotal: All Solvent Types
2501000000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageAll Storage Types: Breathing LossTotal: All Products
2501050000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageBulk Stations/Terminals: Breathing LossTotal: All Products
2501050120	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageBulk Stations/Terminals: Breathing LossGasoline
2501060000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsTotal: All Gasoline/All Processes
2501060050	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Total
2501060052	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Splash Filling

SCC	Sub-Category	Source Description
2501060053	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 1: Balanced Submerged Filling
2501060100	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Total
2501060101	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Displacement Loss/Uncontrolled
2501060102	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Displacement Loss/Controlled
2501060103	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsStage 2: Spillage
2501060200	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsUnderground Tank: Total
2501060201	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageGasoline Service StationsUnderground Tank: Breathing and Emptying
2501995000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product StorageAll Storage Types: Working LossTotal: All Products
2505000120	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportAll Transport TypesGasoline
2505010000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportRail Tank CarTotal: All Products
2505020030	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselCrude Oil
2505020060	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselResidual Oil
2505020090	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselDistillate Oil
2505020120	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselGasoline
2505020121	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product Transport
2505020150	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportMarine VesselJet Naphtha
2505030000	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportTruckTotal: All Products
2505030120	Petroleum Storage and Transport	Storage and TransportPetroleum and Petroleum Product TransportTruckGasoline
2601010000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOn-site IncinerationIndustrialTotal
2601020000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOn-site IncinerationCommercial/InstitutionalTotal
2601030000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOn-site IncinerationResidentialTotal
2610000000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOpen BurningAll CategoriesTotal
2610010000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOpen BurningIndustrialTotal
2610020000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOpen BurningCommercial/InstitutionalTotal
2610030000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryOpen BurningResidentialHousehold Waste (use 26-10-000-xxx for Yard Wastes)
2620000000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryLandfillsAll CategoriesTotal
2620030000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryLandfillsMunicipalTotal
2630000000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryWastewater TreatmentAll CategoriesTotal Processed

SCC	Sub-Category	Source Description
2630020000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryWastewater TreatmentPublic OwnedTotal Processed
2640000000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryTSDFsAll TSDF TypesTotal: All Processes
2640000004	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryTSDFsAll TSDF TypesTransfer, Storage, and Handling
2660000000	Waste Disposal and Recycling	Waste Disposal, Treatment, and RecoveryLeaking Underground Storage TanksLeaking Underground Storage TanksTotal: All Storage Types
2710020030	Agricultural Activities	Natural SourcesAgriculture Production - LivestockHorses and Ponies CompositeTotal
2801000000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTotal
2801000001	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsLand Breaking
2801000003	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTilling
2801000005	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsHarvesting
2801000008	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgriculture - CropsTransport
2801501000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgricultural Propaning - tractor-pulled burners to burn stubble onlyTotal, all crop types
2801502000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsAgricultural Stack Burning - straw stacks moved from field for burningTotal, all crop types
2801520000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsOrchard HeatersTotal, all fuels
2801520004	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsOrchard HeatersDiesel
2801700001	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAnhydrous Ammonia
2801700002	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAqua Ammonia
2801700003	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationNitrogen Solutions
2801700004	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationUrea
2801700005	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Nitrate
2801700006	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Sulfate
2801700007	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Thiosulfate
2801700008	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationOther Straight Nitrogen
2801700009	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationAmmonium Phosphates
2801700010	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - CropsFertilizer ApplicationN-P-K
2805000000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockAgriculture - LivestockTotal
2805001000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockBeef Cattle FeedlotsTotal (also see 2805020000)
2805020000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockCattle and Calves CompositeTotal
2805025000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockHogs and Pigs CompositeTotal
2805030000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockPoultry and Chickens CompositeTotal

SCC	Sub-Category	Source Description
2805035000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockHorses and Ponies CompositeTotal
2805040000	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockSheep and Lambs CompositeTotal
2805045001	Agricultural Activities	Miscellaneous Area SourcesAgriculture Production - LivestockGoatsTotal
2810010000	Other Fuel Combustion	Miscellaneous Area SourcesOther CombustionHuman PerspirationTotal
2810025000	Other Fuel Combustion	Miscellaneous Area SourcesOther CombustionCharcoal GrillingTotal
2810030000	Other Fuel Combustion	Miscellaneous Area SourcesOther CombustionStructure FiresTotal
2810050000	Other Fuel Combustion	Miscellaneous Area SourcesOther CombustionMotor Vehicle FiresTotal
2830000000	Other Fuel Combustion	Miscellaneous Area SourcesCatastrophic/Accidental ReleasesAll Catastrophic/Accidental ReleasesTotal